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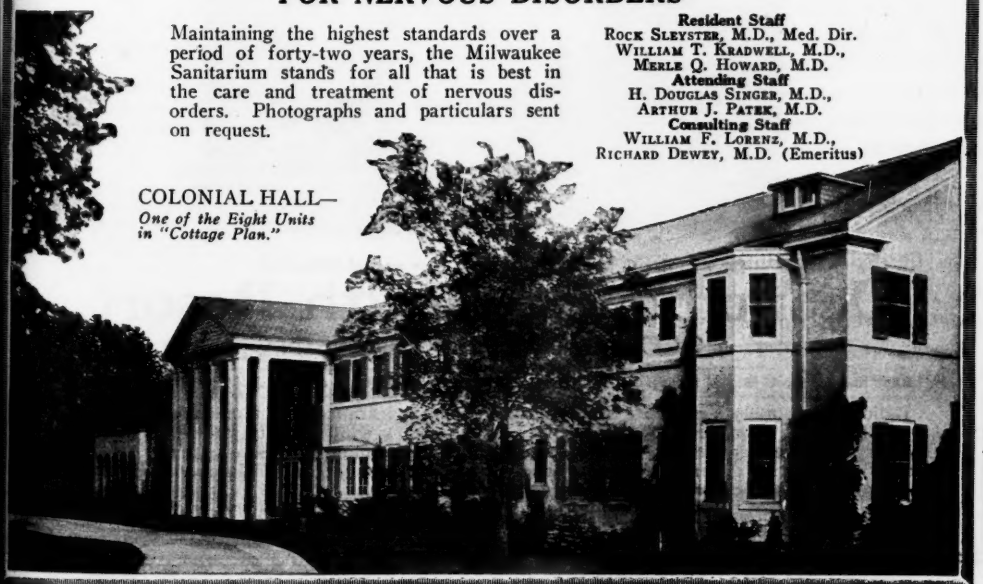

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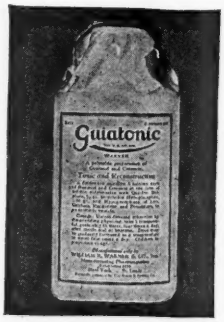

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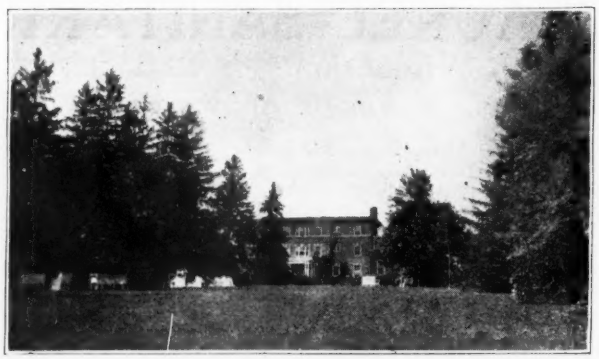

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

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ILLINOIS MEDICAL JOURNAL

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Editorial

CLEAN MILK OR CLEANED MILK?

The order of the Health Commissioner of Chicago barring all milk not from tuberculin tested cows for sale in that city, is more significant than may first appear. This action followed that of the Health Commissioner of Rockford, Illinois, who urged the importance of milk being clean in its original production. These are the first official public recognitions of the fact that pasteurization is not all-sufficient. Pasteurization has for some time been generally accepted as making all milk, so labeled, not only safe, but highly desirable. Attention to the manner of production on the farms and the health of the cows has been sadly neglected. The milk dealers in many localities only require that milk reach them before actually souring.

Pasteurization has enjoyed the best of publicity and the cleverest propaganda for years. This has been so effective that many city people have a mental picture of supremely healthy cows cared for in ideally sanitary barns when they see "Pasteurized" on the cap of a milk bottle. The impression made by this propaganda is almost equally evident among many of the medical profession. Our physicians' interest in and knowledge of the general milk supply has not been aroused. They, too, apparently accept pasteurization as some superhuman agency infallible in action, which automatically not only renders all milk so labelled safe, but even desirable. There is no quarrel with pasteurization. It is a necessary protection to the general milk supply. However, it is time that pasteurization be again recognized for first what it was originally designed to do.

Pasteurization is a method of applying heat to milk over a given period of time in order to kill disease-producing bacteria. Its action in this respect depends upon the unfailing application of a temperature of 142° F. for 30 minutes. In commercial milk plants modern equipment

operated with the assistance of recording thermometers make this process accurately possible. If no breakdowns occur and the operation is carefully and honestly supervised, a properly safeguarded milk results. This proper pasteurization has been shown to reduce the living bacteria present in raw milk 98 per cent. It is fair to say that milk dealers generally do an honest, efficient job of pasteurizing.

No other favorable change in the milk can occur as a result of pasteurization except the killing of harmful bacteria. The killed organisms remain in the product, but the heat acts also to destroy some of the essential vitamines and unfavorably changes the physical composition of the milk. Pasteurization cannot put back flavor and taste lost by previous careless handling. A widespread fallacy blames pasteurization with the characteristic flat taste so common in our city milk. This undesirable taste is in reality caused by contamination with gross filth before pasteurization.

Will any reasonable person agree that any food product is improved by contamination with gross filth? Will any person agree that milk, so excellent a medium for all bacterial growth, will be so improved? Can you persuade yourself that a mixture of manure and stable dust with milk is all right simply because this product will finally on arrival at the milk plant be carefully strained and clarified out before pasteurization? Will any consumer knowingly, willingly and freely use a food product so contaminated? No other food product, except pasteurized milk, is accepted with so little thought as to its cleanliness.

Dairymen should not be blamed for the present situation. The dairymen generally have been made to feel that it makes little difference what efforts they make; their milk will be "cooked" anyway. No rewards are paid them for having healthy cows and for taking pains to produce clean milk unless they seek a special outlet for their milk. Many dairymen maintain healthy herds because they know that only such are profitable. Others produce clean milk because they are so constituted themselves that they will not offer for sale a product they would not use. Many who might do so have been discouraged because their neighbor who milks unwashed teats with dirty hands gets just as much for his milk. The farmer who carefully washes his milking machine after each milking, placing it in an approved antiseptic solution until again needed, finds his neighbor paid just as much who douses his milker in the horse trough and hangs it in the barn.

The care and attention to detail, inseparable from the production of clean milk costs money; more money than the public is now paying for milk. The public can be educated to pay the increased cost. The improvement in flavor, taste and keeping quality will literally sell itself. There are numerous examples of farsighted milk dealers who are building their ever-growing pasteurized milk sales on a foundation of clean milk from healthy cows. They pay their producing dairymen more and in turn their customers are glad to pay them more.

The constantly growing sales of certified milk illustrate the public's appreciation of quality in milk. The effect of certified milk to educate the consuming public to quality would be more widespread and effective if the superlative product more generally received the support to which it is entitled from physicians and milk dealers. In those cities like Detroit, where this interest and support is active, sales of certified milk at more than twice the price of pasteurized milk, prove the public's willingness to pay for quality. Will anyone argue that this willingness to pay for quality will not be evident with respect to any dairy product when the public knows that quality exists?

Our cities will secure clean milk instead of cleaned milk just as fast as they learn what the problem really is. Physicians and health officials working with farsighted milk dealers can bring good milk to the attention of any city in short order. May the motto "Clean Milk, Not Cleaned Milk" guide more health departments in their future undertakings.

A NEW COUNCILOR DISTRICT

The Ninth Councilor District in the southern end of the state, formerly was composed of 23 counties. The distance from north to south was 150 miles and is an equal distance from east to west. The transportation facilities between counties is very inadequate and difficult both by rail and auto, and by the latter method almost impossible at certain seasons of the year. The number of counties comprising the ninth district, together with the handicap just mentioned, made it neither practical nor possible for the Coun-

cilor of the district to visit all of the units which made up his Councilor District without a ruinous sacrifice to his business or profession.

In the interest of better organization and in order to bring about greater efficiency the House of Delegates of the State Society at the May meeting created a Tenth Council District by dividing what was formerly known as the Ninth District. The new Tenth District comprises the counties St. Clair, Monroe, Washington, Randolph, Perry, Jackson, Union, Alexander and Pulaski.

The newly elected Councilor for the recently created Tenth District is Doctor J. S. Templeton, Pinckneyville.

COUNCILOR DISTRICTS AND OFFICERS

First District—Jo Daviess, Carroll, Ogle, Stephenson, De Kalb, Boone, McHenry, Kane and Winnebago counties. D. B. Penniman, Councilor, Rockford.

Second District—Woodford, Livingston, Grundy, Kendall, La Salle, Bureau, Whiteside, Lee, Putnam and Marshall counties. E. E. Perisho, Councilor, Streator.

Third District—Lake, Cook, DuPage, Will and Kankakee counties. S. J. McNeill, J. S. Nagel and R. R. Ferguson, Chicago, Councilors.

Fourth District—Schuyler, Stark, McDonough, Fulton, Hancock, Henderson, Warren, Knox, Peoria, Henry, Mercer and Rock Island counties. Wm. D. Chapman, Councilor, Silvis.

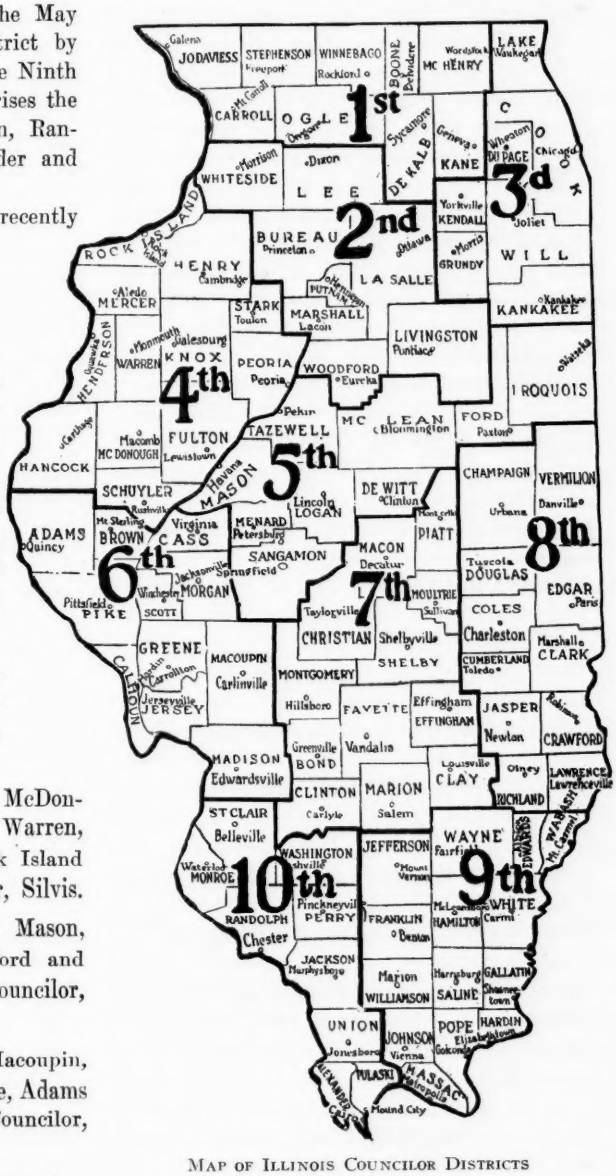
Fifth District—Sangamon, Menard, Mason, Logan, Tazewell, McLean, DeWitt, Ford and Iroquois counties. S. E. Munson, Councilor, Springfield.

Sixth District—Madison, Jersey, Macoupin, Green, Morgan, Scott, Cass, Brown, Pike, Adams and Calhoun counties. H. P. Bierne Councilor, Quincy.

Seventh District—Platt, Macon, Christian, Moultrie, Shelby, Montgomery, Bond, Fayette, Effingham, Clinton, Marion, Clay counties. I. H. Neece, Decatur.

Eighth District—Champaign, Vermilion, Douglas, Edgar, Coles, Clark, Cumberland, Jasper, Crawford, Richland and Lawrence counties. Cleaves Bennett, Champaign.

The Ninth Councilor District, the new arrangement creating a tenth district, divided the old ninth district. The counties comprising the present Ninth District are Jefferson, Franklin, Williamson, Johnson, Massac, Wayne, Hamilton, Saline, Polk, Edwards, Wabash, White, Gallatin and Hardin counties. Andy Hall Councilor, Mt. Vernon.



MAP OF ILLINOIS COUNCILOR DISTRICTS

IMPROVING THE HUMAN RACE BY STANDARDIZED BREEDING TENETS

A staple of the uplifter's stock in trade is recurrent agitation of questions of scientific standardization of legalized mating of the sexes. That such procedure will hasten mortal millennium is claimed by one class of those obsessed individuals who must have some condition to turn topsy-turvy so that they will have something to talk about, as, to such persons, argument is dearer than the breath of life.

To beat Nature at her own game is the ambition of such egotistic materialists and theoretic spiritual dictators. Since the days of the patriarchs man has been raising towers of Babel only to see them swept away. That immutable force known as fate or God or whatever freedom of thought impels one to term the all-powerful and intangible force dominating the universe has as yet never been isolated like the sphirochetae pallida or the violet ray. Yet the conceit of man suffices to engender in some groups the audacity to lay down the law as to who should breed, as to who should be sterile and what shall or shall not be the future of man.

Wrote a great poet:

"Man, proud man, dressed in a little brief authority
Plays such fantastic tricks before high heaven
As makes the very angels weep."

Substitute "reformer" for "man" and the strength and aptness of the remark is doubled from all sane standpoints of the present day.

True science is exact science and of all the exact sciences the purest is mathematics.

One of the laws of mathematical computation is that a man's premise must be definite before he can start for a conclusion. If standardized, legalized mating of the sexes, or as it is termed "eugenics," is to be successful, those who would make it so must know first exactly what type of human is necessary for the perfection of the human race.

To the most casual bystander it is apparent immediately that the word "prototype" might easily have different standards in different climates. A man who is half a fish would be a wonder for ocean habitats. Such a man would be out of his element in those arctic regions that are being brought daily into closer compass with everyday life. A man who was all brain and no body would be a ring-tail roarer among the Llamas and pure thinkers of the far east or the Esotercians or deep students of the civilized world. Dempsey, Tunney or Wills would amount to far more in the midst of the jungles. Before any group of mortals decides what type is the fittest for survival there is much to be taken into consideration. A man whose especial talents would have made him a little Napoleon some fifty years ago might be only a mediocre quantity if set down in the midst of modern inventions. Yet periodically for academic discussion in medical and scientific literature up pops this eugenics question.

To be sure, as remarked previously, no one knows which will be the type fittest for ultimate survival. Neither can any one explain why families, seemingly ideal from a physical, mental and spiritual standpoint to act as sources for race perpetuation become extinct without reason. Nor why families, equally undesirable in all reason to remain on top of the earth, flourish like the proverbial green bay tree.

The only possible answer would seem to be one quoted from the catechism: "What is a mystery?" "A mystery is something we cannot understand."

Secrets of race perpetuation appear to be among nature's mysteries. Of these secrets man has solved the technique of many but the exact method of none.

Sex, the paramount mystery of life, piques man's pride and his curiosity. The mechanism of life has been reproduced by man. The mechanism of sex trembles upon the eve of discovery. But though the "how" may seem apparent, no man yet has dared set forth the "why." That secret remains in the beyond.

Parents below par themselves frequently have unusual families. Parents who measure up to par often have offspring who lack pathogenic defense. Primitive man would have scouted the idea that a man with a hairless body and without a tail could rule the universe and that mechanical and chemical inventions of the brain could conquer brute forests and forest brutes.

Electricity has been harnessed somewhat to the means of man. Though we have the radio and the marconigram, we have not as yet isolated nor established the principle that makes for that attraction between the sexes for which both men and women will sacrifice all that is physical and material. Man has the same instinct in mating as the lesser animals. This law of biology holds taut to its secrets. From the

love philters of classic times to the so-called psychological lures of today the range is broad and long. But to this very hour in so far as exact science is concerned the matter pivots on this point, "Quien sabe?"

Wisely indeed has it been written, "Every dog fancier knows that man has the same instinct found in the lower animals to select a mate who is more or less different from himself. Species survive by selection of the average specimens as a rule for wide variations generally perish, and the only living animals are those which have inherited this tendency to mate with opposites. Wide variations do not even originate new species, for these arise by survival of types somewhat near the average. The same law governs man's survival. Should like types mate, their common characteristics may be so exaggerated as to be harmful and the line perish. Incest is unnatural because races die out from in-and-in breeding and surviving types are all descended from those who had opposite tendencies. Exogamy or the selection of mates from other tribes was the next step, and became universal for no other tribes were so vigorous, and consequently they perished. Ancient biblical moral laws against consanguineous and endogamous marriages are merely the expression of inherited instincts.

Mankind being then descended wholly from those who naturally marry their opposites, the present tendency is a natural law. It is an instinct for those of great intelligence to marry those of less than the average, for the offspring revert to the better average. Only occasionally do exceptionally able people marry their equals to produce those remarkable families, all of whom are noted. It is very evident that if we try to improve the race intellectually by the marriage of like types we will violate the natural law upon which our existence is based. As for men of genius, we must let happy accident produce them as it always has.

Comes also the danger of artificial selection. Oddly enough, Nature's laws being sufficient unto themselves, yet Nature seems to expect that they shall remain so. Penalty for transgression is inevitable. Penalty for tampering seems equally drastic. Soviet Russia seems not to have succeeded in sitting in judgment upon the laws of soul and body. Let space be given here to a citation of comment about the once famous "Oneida community." Said this writer:

"Artificial matrimonial selection has been tried, though the results were disastrous. The Oneida community was based upon the idea that eugenics was a science. Unfortunately, the leaders failed to realize that the men and women who joined in such an abnormal life must have been abnormal themselves. Though they tried to select proper physical mates there was less attention paid to the mental and nervous side. The last report of the experiment was published some years ago and it merely referred to the expense saddled upon the state in caring for so many of the offspring in the public asylums. No further comment is needed except to remark that people who would violate instinct by following artificial matrimonial selection, are too abnormal, in our race, at least, to produce normal offspring. The only practical side of eugenics which concerns the medical profession is the fact that advice is now and then requested as to whether a certain proposed alliance is desirable. It is solely a question as to whether there is ability to fulfill the role and survive. Rarely is there any reference to the viability or vigor of the future offspring, but should it be a vital question as in royal marriages, it is settled upon a general survey of each family and eugenics is not involved in the least."

Biologists should investigate more definitely the tendency to be average or normal. No variation or modification from the normal is causeless. The abnormality will disappear in subsequent generations if this cause is removed. And in this respect let quotation be made again:

"This tendency to be normal is a biologic law of such paramount importance to physicians that it is astounding there is less heard of it. The influence of the environment in changing organisms is becoming more and more recognized, and heredity reduced to a mere tendency to do as the parent did in like conditions. It wholly explains why defective parents, if they live in a healthy normal manner, may produce fine offspring. The children have not been damaged as the parents were. Instead of excluding such parents from matrimony by eugenic theories, the whole trend of investigation must be in the direction of discovering and removing the causes of the defects. Personal hygiene must derive many rules from embryologic investigations. By advocating

proper methods of living we will do more good in the way of human stirpiculture than by tampering with matrimonial instincts."

IT SOUNDS LIKE AN EDITORIAL FROM THE ILLINOIS MEDICAL JOURNAL

THE DANGER OF A CENTRALIZED DESPOTISM IN WASHINGTON, D. C.

At the meeting of the American Bar Association in Denver, July 15, the report of the committee on American Citizenship scored paternalism in government and stated that liberty is traded for United States alms.

BARTER RIGHTS FOR BOUNTIES

"The Roman citizens," it declared, "bartered their ancient liberties for bread and circuses. The American citizen today freely barters his individual liberties and rights for government bounties and bonuses. He demands government interference in everything and surrenders freedom and his individuality in return for it."

The listeners settled down in their seats with every evidence of enjoyment as the report continued: "The old virile spirit is waning to extinction. The American citizen is being pauperized by government alms.

"If he supports the government he asks the government in return to support him. If prices are too high, instead of doing without, he wants the government to lower them; if they are too low, he wants the government to raise them.

"He wants the government to build his roads, educate his offspring, sanitate him, physic him, bring his children into the world, prescribe his dietary, and tell him what to believe in matters of conscience.

FURTHERED BY STRONG GROUPS

"This tendency, constantly accelerated, is furthered by powerful groups, some of whom have selfish interests at stake, but by many whose leaders are impelled by the loftiest motives and seek them on the grounds of economic or social welfare."

These tendencies, the report said, are replacing representative government with an autocratic bureaucracy.

"It is apparent," it said, "that we are approaching the time when the states may be reduced to mere geographical expressions to the rank of counties, when all important powers will be centralized in Washington, when the bill of rights will become a mere scrap of paper, and this government will come, as all other democracies have come, to a centralized despotism."

PRESIDENT COOLIDGE FEARS THE EXTENSION OF AUTHORITY OF THE FEDERAL GOVERNMENT

No plan of centralization has ever been adopted which did not result in bureaucracy, tyranny, inflexibility, reaction and decline. . . The states should not be induced by coercion or by favor to surrender the management of their own affairs.—President Coolidge's Williamsburg speech, May 15.

Discussing in this connection an "element of recent development," he said:

"Direct primaries and direct elections bring to bear upon the political fortunes of public officials the greatly disproportionate influence of organized minorities. Artificial propaganda, paid agitators, selfish interests, all impinge upon members of legislative bodies to force them to represent special elements rather than the great body of their constituency.

RUINOUS TO PEOPLE

"When they are successful, minority rule is established, and the result is an extravagance on the part of the government, which is ruinous to the people, and a multiplicity of regulations and restrictions for the conduct of all kinds of necessary business, which becomes little less than oppression.

WARNS OF CHAOS

"If the federal government should go out of existence, the common run of people would not detect the difference in the affairs of their daily life for a considerable length of time. But if the authority of the states were struck down disorder approaching chaos would be upon us within twenty-four hours. . . Of all forms of government, those administered by bureaus are about the least satisfactory to an enlightened and progressive people. Being irresponsible, they become autocratic, and being autocratic, they resist all development.

"Unless bureaucracy is constantly resisted it breaks down representative government and overwhelms democracy. It is the one element in our institutions that sets up the pretense of having

authority over everybody and being responsible to nobody.

NOT FOR WRONG DOING

"The states should not be induced by coercion or by favor to surrender the management of their own affairs. The federal government ought to resist the tendency to be loaded up with duties which the states should perform. It does not follow that because something ought to be done the national government ought to do it."

THE DIFFERENCE BETWEEN MEMBERSHIP AND FELLOWSHIP IN THE A. M. A.

From time to time we find that many of our members are confused as to the difference between Membership and Fellowship in the American Medical Association.

The following article is therefore reprinted from the American Medical Association Bulletin for the information of our members:

ONCE MORE: MEMBERSHIP-FELLOWSHIP

Every member in good standing in any constituent state medical association, whose name is reported to the secretary of the American Medical Association for enrollment, is a member of the American Medical Association. No *member* of the American Medical Association is called on, as such, to pay any dues or to contribute financially to the Association.

Every member of the American Medical Association in good standing is eligible for *Fellowship*. To qualify as a Fellow, a member in good standing has only to make formal application for that relation and to subscribe for the Journal. Fellowship dues and subscription to the Journal are both included in the one annual payment of $5, which is the cost of the Journal to subscribers who are not Fellows.

None but Fellows are eligible for election as officers; none but Fellows can serve as members of the House of Delegates; none but Fellows can register at the annual sessions of the Association or participate in the work of its scientific sections.

On July 1, 1926, there were 92,827 names on the membership roll, 60,021 of which were duly listed on the Fellowship roster.

Members of state medical associations pay dues to those bodies, but they pay nothing to the American Medical Association. *Fellows* pay dues and subscriptions to the Journal in the sum of $5 a year, which has nothing to do with county or state dues.

DATE SET FOR THE NEXT ANNUAL MEETING OF THE STATE SOCIETY.

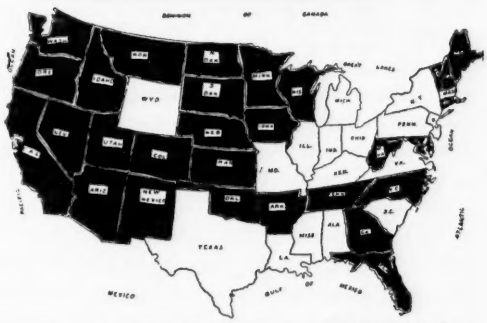
The officers of the Illinois State Medical Society have selected May 31, June 1 and 2, 1927, for the date of the seventy-seventh annual meeting of the Society to be held at Moline. The American Medical Association will meet in Washington May 16 to 20, which is the time that our meeting should be held under our by-laws.

On account of the fact that there were no conflicts with meetings of societies of adjoining states and the later date seem preferable to having it the first of May. We should begin now to prepare for the most successful meeting the Illinois State Medical Society has ever had.

ILLINOIS DOES NOT RECOGNIZE CHIROPRACTIC AS BEING A DISTINCT HEALTH SERVICE.

The following data under the caption: "Why Not Illinois?" has been sent broadcast over the state by the Illinois Chiropractic Research Bureau:

WHY NOT ILLINOIS?



These Twenty-Seven States, marked in black, all have Chiropractic Boards of Examiners, recognizing Chiropractic as being a separate and distinct Health Service. — Why is not Illinois included in this list?

It is up to You — THE PEOPLE

Note and Comment: There are several quite obvious reasons why Illinois is not included in

the list. The following are at once apparent:

1st. The Illinois State Medical Society publishes a Journal that is ever on the alert to safeguard the people and the profession from the enactment of pernicious Medical Legislation.

2nd. The State Medical Society is officered by competent, alert and aggressive men who are at all times on the job and the rank and file of the profession is ever responsive to the recommendations of their officers and official family.

3rd. The state has a population of six and one-half millions of people, seventy-five per cent of whom possess brains and reasoning power sufficient to discriminate between the real and the bogus—the charlatan and impostor from the man of science.

LAUGHED THE CHIROPRACTORS' BILL TO DEATH. THE WONDERFUL HEALING POWERS OF THE BLACKSMITH.

The chiropractors and drugless healers lost their fight for state recognition in the recent session of the New York legislature when the Senate killed the Gibbs bill, a measure which would have permitted them to practice under strict supervision of the State Department of Health. The introducer of the bill urged its passage with considerable oratorical effect until he told of the wonderful healing powers of a blacksmith in his district. After that the bill was laughed to death.

FIND CHIROPRACTOR GUITLY OF VIOLATING MEDICAL PRACTICE ACT.

According to *Moline Dispatch,* July 8, 1926, Milo Grimes, Rock Island, Illinois, chiropractor, was found guilty by a jury in county court late yesterday of violating the medical practice act by practicing without a license.

The case was considered important and probably will be appealed to the supreme court. Chiropractors throughout the state are said to be interested and to have contributed toward a defense fund. Six other chiropractors await trial here as the result of an investigation made by the state department of health and investigation.

The chiropractors maintain they are being persecuted. State officials deny this charge.

One of the important elements in the trial of Grimes is reported to have been the testimony of Mr. and Mrs. Edward Cook, 2022 Fortieth street, Rock Island, who declared that Grimes had treated their daughter and that she later died of diphtheria.

The penalty ranges from a fine of $500 to a year in jail or both.

WANT LAW CHANGED

Grimes, who admitted that he had practiced without a license, said he had hoped to show that the present law is unfair because it provides an examining board of medical men rather than of chiropractors. He said he thought this might result in an acquittal and also in an amendment to the law.

Trial of the first of the other six chiropractic cases was started this morning. J. J. McGinley of Rock Island is the defendant.

According to Assistant State's Attorney D. H. McNeal, who is in charge of the prosecution of the cases, a conviction where a chiropractor practiced without a license has been carried to the supreme court and the law governing the licensing of chiropractors was declared to be constitutional by the higher court.

Note and comment: The verdict is a severe blow to the chiropractors. We are reliably informed that for weeks before the trial of the chiropractors by the Rock Island County authorities the cities of Rock Island, Moline and Silvis was flooded with hand to hand printed matter showing how the chiropractor is persecuted. It was evidently a campaign to educate prospective jurymen. Since the conviction of Grimes three other chiropractors were found guilty by Rock Island County jurors.

CHIROPRACTORS BEFOG THE REAL ISSUE. THE PEOPLE OF THE STATE DO NEED HEALTH PROTECTION.

Since the conviction of four chiropractors in Rock Island County for practicing Medicine without a license, the State has been flooded with chiropractic propaganda sent by the Illinois Chiropractic Research Bureau.

The following letter is a sample of misleading and untruthful statements being fed to the poor deluded and overburdened taxpayers.

ILLINOIS CHIROPRACTIC RESEARCH BUREAU
BOX 107, BELLEVILLE, ILLINOIS

Rock Island, Ill., July 19.—Money from the pockets of taxpayers of Illinois is being used to fight the battle of the medical fraternity of Illinois against chiropractic, according to charges made today by Dr. A. E.

Lill of Belleville, president of the Illinois Chiropractic Research Bureau.

"Medical men are attempting to stamp out drugless healers and public funds are being used to do it with," said Dr. Lill. "Under the guise of prosecuting practitioners for technically lacking licenses, they are attempting to halt competition and force the public back to medicine.

"This was proven in Rock Island when, during the past two weeks, more than $1,500 of county funds were spent by the state in prosecuting four chiropractors for lacking licenses. This money came from a county already in dire financial straits. It came from citizens who have been taxed to the limit.

"Promotion of health was no issue in the trial of the four which took nearly two weeks. A venire of 24 jurors, at $5 a day each, was required. Then there were the salaries of the judge, the state's attorney, court attaches, meals, light, and other expenses. The taxpayers paid the bill. Why? Not because the state needed protection. But because medical men were on the warpath against chiropractic.

"Not one bit of evidence was allowed in the trials as to the good the four defendants had done. No reflection was cast on the professional ability of the defendants. The medical forces merely charged, by using the state as a catspaw, that the four lacked licenses.

"Inasmuch as the medical men control all licenses and these four chiropractors were not even allowed to apply for a license, they were naturally found technically guilty. The fact that they had aided hundreds of persons back to health was not allowed as evidence.

"This same process is being repeated through the state. Medical forces are persecuting chiropractors with the use of state funds merely because the new profession has been unusually successful in getting results. Chiropractors resent this underhanded means of attack."

The four chiropractors who were found guilty were Drs. Milo Grimes, George J. Burgart, J. J. McGinley and John Lee. Dr. McGinley is one of the deans of the profession in Illinois and the other three are all prominent.

Note and Comment: Gossip has it that these are the cases that are going to the Supreme Court. We note that they are short, snappy and unencumbered. They are virtually a plea of guilty. "Yes, I practiced * * *. No, I had no license * * * the law is unfair so I took out no license, hoping both to be excused and to get the law changed."

NOW IT'S DONE

"Do you," the telephone company inquires, "observe the golden rule of party-line usage?"

"Absolutely; if the other party's talking, we jiggle the receiver hook and make wise cracks until he gets discouraged and quits."—*Buffalo Express.*

INTER-STATE POST GRADUATE ASSEMBLY OF NORTH AMERICA

Cleveland, Ohio, October 18-22, 1926

TENTATIVE PROGRAM

General Headquarters for all scientific sessions and Exhibits, Municipal Auditorium.

Hotel Headquarters: Hotel Cleveland.

On October 15th and 16th there will be pre-assembly clinics in the hospitals of Cleveland.

First Day, Monday, October 18, 7 A. M.

1. Diagnostic Clinic (Medical), Dr. Campbell P. Howard, Prof. of Medicine, McGill University Faculty of Medicine, Montreal, Canada.

2. Diagnostic Clinic (Surgical), Dr. George W. Crile, Cleveland Clinic, Cleveland, Ohio.

3. Diagnostic Clinic (Medical), Dr. Friedrich Mueller, Prof. of Medicine, University of Munich, Munich, Germany.

GYNECOLOGICAL SYMPOSIUM

4. Diagnostic clinic and address. Cases of Uterine Fibroids. The Rational Treatment of Tubal Disease, Dr. C. Jeff Miller, Prof. of Obstetrics and Clinical Gynecology, Tulane University, New Orleans, Louisiana.

5. Diagnostic clinic and address. Pelvic cases. Pelvic Infections, Dr. F. W. Marlow, Associate Prof. of Gynecology, University of Toronto Faculty of Medicine, Toronto, Canada.

Intermission

Review Exhibits

6. Diagnostic clinic and address. Pelvic cases. Displacement of Uterus and Vaginal Walls, Dr. Howard C. Taylor, Prof. of Clinical Gynecology, Columbia University School of Medicine, New York, New York.

7. The Contrasting indications for Surgery and Radiation in the treatment of Tumors of the Uterus, Dr. J. O. Polak, Prof. of Obstetrics and Gyneology, Long Island College of Medicine, Brooklyn, New York.

8. New Researches concerning Cyclic Processes in the Female Genital Organs, Dr. A. H. M. J. Van Rooy, Prof. of Obstetrics and Gynecology, University of Amsterdam, Amsterdam, Holland.

9. Uterine Hemorrhages; Causes and Control, Dr. Albert Doderlin, Prof. of Obstetrics and Gynecology, University of Munich, Munich, Germany.

Afternoon Session, 1 P. M.

PROBLEMS OF CHILD-BEARING—SYMPOSIUM

10. Sterility, Abortion and Miscarriage, Dr. Barton Cooke Hirst, Prof. of Obstetrics, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

11. Certain important Medical Complications of Pregnancy, Dr. William W. Herrick, Associate Prof. of Clinical Medicine, Columbia University School of Medicine, New York, New York.

12. Indications for Cesarean Section, Dr. Arthur H. Bill, Prof. of Obstetrics, Western Reserve University School of Medicine, Cleveland, Ohio.

13. Surgical Complications of Pregnancy; Appendicitis; Tumors of the Uterus; Tumors of the Breast;

Hyperthyroidism; Acute Ileus, Dr. George W. Crile, Cleveland Clinic, Cleveland, Ohio.

Intermission

Review Exhibits

14. Pyloric Stenosis in Infants, Dr. Richard W. Bolling, New York, New York.

15. Problems of Infant Feeding, Dr. H. J. Gerstenberger, Prof. of Pediatrics, Western Reserve University School of Medicine, Cleveland, Ohio.

16. Nephritis, Dr. Friedrich Mueller, Prof. of Medicine, University of Munich, Munich, Germany.

17. Problems in Orthopedic Surgery, Dr. N. Gurgel, Prof. of Orthopedic Surgery, University of Rio De Janeiro, Rie De Janeiro, Brazil.

Evening Session, 7 P. M.

CANCER—SYMPOSIUM

18. Carcinomata of the Buccal Cavity, Dr. Joseph Bloodgood, Associate Prof. of Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

19. Is Cancer the Result of an Infectious Process? Dr. Francis C. Wood, New York, New York.

20. Demonstration of the Growth of Tissue by means of moving pictures, Dr. Alexis Carrel, Rockefeller Institute, New York, New York.

21. End Results of the Treatment of Cancer and the Factors determining them, Dr. Robert, Greenough, Assistant Prof. of Surgery, Harvard Medical School, Boston, Massachusetts.

Second Day, Tuesday, October 19, 7 A. M.

1. Diagnostic Clinic (Surgical), Mr. David P. D. Wilkie, F. R. C. S., Prof. of Surgery, University of Edinburgh, Edinburgh, Scotland.

2. Diagnostic Clinic (Medical), Dr. Henry A. Christian, Prof. of Medicine, Harvard Medical School, Boston, Massachusetts.

3. Diagnostic Clinic (Surgical), Sir William I. de Courcy Wheeler, Dublin, Ireland.

4. Diagnostic Clinic (Medical), Dr. A. Simonena, Prof. of Medicine, University of Madrid, Madrid, Spain.

GASTRO-INTESTINAL TRACT—SYMPOSIUM

5. Diagnostic clinic and address, Abdominal cases. Acute Abdominal Lesions, Dr. John F. Erdman, Prof. of Surgery, New York Post Graduate School of Medicine, New York, New York.

Intermission

Review Exhibits

6. Diagnostic clinic and address. Rectal and colon cases. Carcinoma of the Rectum and Colon, Dr. Daniel F. Jones, Boston, Massachusetts.

7. Dilatation of the Duodenum, Mr. David P. D. Wilkie, F. R. C. S., Prof. of Surgery, University of Edinburgh, Edinburgh, Scotland.

8. Surgical Indications and End Results of Operations for Ulcer of the Stomach, Sir William I. de Courcy Wheeler, Dublin, Ireland.

9. Surgical Indications and End Results of Operations for Cancer of the Stomach, Dr. Donald C. Balfour, Prof. of Surgery, University of Minnesota Graduate School of Medicine, (Mayo Clinic), Rochester, Minn.

10. Intestinal Toxemia, Dr. Mariano R. Castex, Prof. of Clinical Medicine, National University of Buenos Aires, Buenos Aires, Argentina.

Afternoon Session, 1 P. M.

11. Medical Treatment of Ulcer of the Stomach, Dr. Franklin W. White, Boston, Massachusetts.

12. The Indications and Contra-indications for Surgical interference in cases of Duodenal Ulcer, Dr. Campbell P. Howard, Prof. of Medicine, McGill University Faculty of Medicine, Montreal, Canada.

13. The Achlorhydria group of Disturbances. (Presentation of cases), Dr. Henry A. Christian, Prof. of Medicine, Harvard Medical School, Boston, Massachusetts.

14. The Postmortem, Dr. Howard T. Karsner, Prof. of Pathology, Western Reserve University School of Medicine, Cleveland, Ohio.

Intermission

Review Exhibits

15. Address in Surgery, Dr. Ferdinand Sauerbruch, Prof. of Surgery, University of Munich, Munich, Germany.

OTO-LARYNGOLOGY—SYMPOSIUM

16. Dr. Perry G. Goldsmith, Prof. of Oto-laryngology, University of Toronta Faculty of Medicine, Toronto, Canada.

17. Dr. Samuel Crowe, Prof. of Oto-laryngology, Johns Hopkins University School of Medicine, Toronto, Canada.

18. Address in Surgery, Mr. Herbert J. Paterson, F. R. C. S., London, England.

Evening Session, 7 P. M.

STUDIES IN APPLIED ANATOMY

19. Treatment of Hernia, Dr. Carl A. Jamann, Dean and Prof. of Clinical Surgery, Western Reserve University School of Medicine, Cleveland Ohio.

20. The Alimentary Canal of the Medical Student —Radiographic studies, Dr. T. Wingate Todd, Prof. of Anatomy, Western Reserve University School of Medicine, Cleveland Ohio.

PHYSIOLOGICAL STUDIES

21. The Newer Physiology of the Gastro-intestinal Tract, Dr. Andrew C. Ivy, Department of Physiology, University of Chicago, Chicago, Illinois.

22. Present Knowledge of the Function of the Liver, Dr. Francis Peyton, Rous, Pathologist, Rockefeller Institute for Research, New York, New York.

Third Day, Wednesday, October 20, 7 A. M.

1. Diagnostic Clinic, (Surgical), Dr. Dean D. Lewis, Prof. of Surgery, Johns Hopkins University, School of Medicine, Baltimore, Maryland.

2. Diagnostic Clinic (Medical), Dr. Hans C. Jacobaeus, Prof. of Internal Medicine, University of Stockholm, Stockholm, Sweden.

3. Diagnostic Clinic (Surgical), Dr. Harvey Cushing, Prof. Surgery, Harvard Medical School, Boston, Mass.

4. Diagnostic Clinic (Medical), Dr. James B. Her-

rick, Prof. of Medicine, University of Chicago School of Medicine (Rush), Chicago, Illinois.

5. Diagnostic Clinic (Surgical), Dr. William D. Haggard, Prof. of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee.

Intermission

Review Exhibits

RESPIRATORY AND CIRCULATORY DISEASES—SYMPOSIUM

6. Methods and Results in the Treatment of Empyema, Col. William L. Keller, Medical Department, United States Army; Surgeon-in-Chief, Walter Reed General Hospital, Washington, D. C.

7. Lung Abscess—Roentgenographic Aspects, Dr. Walter C. Hill, Cleveland, Ohio.

8. Lung Abscess—Surgical Aspects, Dr. Evarts Graham, Prof. of Surgery, Washington University School of Medicine, St. Louis, Missouri.

9. Practical Use of Thoracoscopy, Dr. Hans C. Jacobaeus, Prof. of Internal Medicine, University of Stockholm, Stockholm, Sweden.

Afternoon Session, 1 P. M.

10. Summary of Experiences up-to-date in the surgical treatment of Angina Pectoris, Dr. Elliott C. Cutler, Cleveland, Ohio.

11. Aortitis and Heart Failure, Dr. Roy W. Scott, Cleveland, Ohio.

12. Effects of Diseases of the Thyroid on the Heart and Their Treatments, Dr. Chrus C. Sturges, Peter Bent Brigham Hospital, Boston, Mass.

BRAIN AND CENTRAL NERVOUS SYSTEM—SYMPOSIUM

13. Ventriculography, Dr. Walter E. Dandy, Associate Prof. of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

14. The Present Status of our Knowledge of the Pituitary Body, Dr. Harvey Cushing, Prof. of Surgery, Harvard Medical School, Boston, Massachusetts.

15. Meningeal Adhesions and their Clinical Signs, Dr. Samuel Clark Harvey, Associate Prof. of Surgery, Yale University School of Medicine, New Haven, Conn.

Intermission

Review Exhibits

16. Teachings of Epidemic Encephalitis in regard to the General Physiology and Pathology of the Nervous System, Dr. August Wimmer, Prof. of Psychiatrie, University of Copenhagen, Copenhagen, Denmark.

17. Results of Peripheral Nerve Lesions in Civil Life, Dr. Dean Lewis, Prof. of Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Evening Session, 7 P. M.

ORTHOPEDICS AND RECONSTRUCTION SURGERY—SYMPOSIUM

18. Fractures of the Long Bones, Dr. William Darrach, Dean and Associate Prof. of Surgery, Columbia University School of Medicine, New York, New York.

19. Position of Orthopedic in Medical Instruction, Dr. Patrik Haglund, Prof. of Orthopedic Surgery, University of Stockholm, Stockholm, Sweden.

20. Attitudinal Strains. Presentation of Cases, Dr. Robert B. Osgood, Prof. of Orthopedic Surgery, Harvard Medical School, Boston, Massachusetts.

21. Orthopedic Management of Visceroptosis. Presentation of cases, Dr. Joel E. Goldthwait, Boston, Massachusetts.

22. The Arthritides, Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

23. Reconstruction Surgery in Civilian Practice, Dr. Clarence L. Starr, Prof. of Surgery, University of Toronto Faculty of Medicine, Toronto, Canada.

24. Transplantation of Foreign Bodies in Orthopedic Practice, Dr. Fritz Lange, Prof. of Orthopedic Surgery, University of Munich, Munich, Germany.

Fouth Day, Thursday, October 21, 7 A. M.

Diagnostic Clinic (Surgical), Dr. Arthur D. Bevan, Prof. of Surgery, University of Chicago School of Medicine (Rush), Chicago, Illinois.

2. Diagnostic Clinic (Medical), Dr. Mariano R. Castex, Prof. of Clinical Medicine, National University of Buenos Aires, Buenos Aires, Argentina.

3. Diagnostic Clinic (Surgical), Dr. Charles H. Mayo, Prof. of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

4. Diagnostic Clinic (Medical), Dr. Charles F. Hoover, Prof. of Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

5. Diagnostic Clinic (Surgical), Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania Graduate Scvhool of Medicine, Philadelphia, Pennsylvania.

Intermission

Review Exhibits

GOITER—SYMPOSIUM

6. Diagnostic clinic and address, Goiter cases. Intrathoracic Goiter, Dr. Francis H. Lahey, Boston Massachusetts.

7. Diagnostic clinic and address. Thyroid cases. Cancer and Thyroid, Dr. Eugene H. Pool, Clinical Prof. of Surgery, Columbia University School of Medicine, New York, New York.

8. The Clinical Use of Iodin, Dr. Henry S. Plummer, Prof. of Medicine, University of Minnesota Graduate School of Medicine (Mayo Clinic), Rochester, Minnesota.

Afternoon Session, 1 P. M.

GALL-BLADDER AND LIVER—SYMPOSIUM

9. Differential Diagnosis between Gastric and Duodenal Ulcer and Gall Stones, Dr. William D. Haggard, Prof. of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee.

10. Re-Study of the Bile Tracts, Dr. Arthur D. Bevan, Prof. of Surgery, University of Chicago School of Medicine (Rush), Chicago, Illinois.

11. The Hepatic Cirrhosis of Surgical Delay, Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania Graduate School of Medicine, Philadelphia, Pennsylvania.

Dr. Stanley P. Reimann, Prof. of Experimental Pathology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

INFECTIONS—SYMPOSIUM

12. Present Status of Serum Therapy in the Treat-

ment of the Exanthemata, Dr. J. G. FitzGerald, Prof. of Hygiene and Preventive Medicine, University of Toronto Faculty of Medicine, Toronto, Canada.

13. Recent Advances in our Knowledge of Pneumonia, Dr. Russell L. Cecil, Bellevue Hospital, New York, New York.

14. Syphilis of the Heart and Blood Vessels, Dr. Charles F. Hoover, Prof. of Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

15. Infectious Endocarditis, Sir Thomas J. Horder, Bt., Prof. of Medicine, St. Bartholomew's Hospital and College, London, England.

Intermission

Review Exhibits

DIABETES—SYMPOSIUM

16. The Present Status of the Diabetic Problem. (Presentation of cases), Dr. Rollin T. Woodyatt, Clinical Prof. of Medicine, University of Chicago School of Medicine (Rush), Chicago, Illinois.

17. End Results in the Treatment of Diabetes in Children, Dr. Elliott P. Joslin, Clinical Prof. of Medicine, Harvard Medical School, Boston, Massachusetts.

Evening Session, 7 P. M.

DIABETES—SYMPOSIUM (Continued)

18. Physiological Basis for the Action of Insulin, Dr. J. J. R. Macleod, Prof. of Physiology, University of Toronto Faculty of Medicine, Toronto, Canada.

19. The Eye-Grounds in General Diagnosis, Dr. George E. DeSchweinitz, Prof. of Ophthamology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

PROBLEMS OF POPULATION AND OF HEREDITY

20. Anomalies of Development, Dr. Charles H. Mayo, Prof. of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

21. Mechanism is Heredity, Edwin G. Conklin, Ph. D., Princeton University, Princeton, New Jersey.

22. Heredity in the Clinic, Dr. Lewellys F. Barker, Prof. Emeritus of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

23. Heredity and Cancer, Mr. William Sampson Handley, F. R. C. S., Surgeon, Richard Hollin's Cancer Research School; Middlesex Hospital; Women and Children's Hospital and Guy's Hospital, London, England.

Fifth Day, Friday, October 22, 7 A. M.

1. Diagnostic Clinic (Surgical), Mr. Archibald Young, F. R. C. S., Prof. of Surgery, University of Glasgow, Glasgow, Scotland.

2. Diagnostic Clinic (Medical), Dr. Lewellys F. Barker, Prof. Emeritus of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

3. Diagnostic Clinic (Surgical), Dr. William J. Mayo, Chief of Staff, Mayo Clinic, Rochester, Minnesota.

4. Diagnostic Clinic (Medical), Sir Thomas J. Horder, Bt., Prof. of Medicine, St. Bartholomew's Hospital and College, London, England.

5. Diagnostic Clinic, Surgical), Mr. John M. C. Fraser, F. R. C. S., Prof. of Surgery, University of Edinburgh, Edinburgh, Scotland.

Intermission

Review Exhibits

GENITO-URINARY TRACT—SYMPOSIUM

6. Diagnostic clinic and address. Genito-Urinary cases. Kidney Lesions, exclusive of Stones, Dr. Hugh Hampton Young, Clinical Prof. of Urology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

7. Diagnostic clinic and address. Bladder and Prostate cases. Bladder and Prostate, Dr. Hugh Cabot, Dean and Prof. of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan.

8. Diagnostic clinic and address. Cases of Stones in the Upper Urinary Tract. Stones in the Upper Urinary Tract, Dr. William F. Braash. Prof. of Urology, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

9. Classification of the Diseases of the Kidney from the Point of View of Progressive Treatment, Dr. Alexander von Koranyi, Prof. of Internal Medicine, University of Budapest, Budapest, Hungary.

Afternoon Session, 1 P. M.

DISEASES OF THE BREAST—SYMPOSIUM

10. Diagnostic clinic and address. Breast Cases. Tumors of the Breast, Dr. John M. T. Finney, Prof. of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

11. The Conservative Surgical Treatment of the Breast, Dr. L. L. McArthur, Chicago, Illinois.

12. Address in Surgery, Mr. John M. C. Fraser, F. R. C. S., Prof. of Surgery, University of Edinburgh, Edinburgh, Scotland.

13. Summary of Personal Experience in the Field of Abdominal Surgery, Dr. William J. Mayo, Chief of Staff, Mayo Clinic, Rochester, Minn.

14. Summary of Personal Experience in the Field of General Medicine, Dr. James B. Herrick, Prof. of Medicine, University of Chicago School of Medicine (Rush), Chicago, Illinois.

Intermission

Review Exhibits

15. Address in Medicine, Dr. A. Simonena, Prof. of Medicine, University of Madrid, Madrid, Spain.

16. Address in Surgery, Mr. Archibald Young, F. R. C. S., Prof. of Surgery, University of Glasgow, Scotland.

17. General Therapeutic Methods of the Protection of Patients in the Extremes of Life, Dr. C. G. Jennings, Detroit, Michigan.

18. Blood Transfusion; Precise Indications, Blood Grouping, Choice of Methods, Dr. John L. Yates, Milwaukee, Wisconsin.

19. Anesthesia from the Standpoint of the Surgeon, Dr. George P. Muller, Prof of Clinical Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

EVENING BANQUET

Addresses by Distinguished Citizens of the World.

NOTE: The following distinguished teachers and

clinicians from foreign countries have accepted tentatively to take part on the program but have not, as yet, sent in their subjects.

Dr. M. P. Bull, Prof. of Surgery, King Frederick's University, Oslo, Norway.

Dr. Rudolf Balint, Prof. of Internal Medicine, University of Budapest, Budapest, Hungary.

Dr. A. Carnot, Prof. of Therapeutics, Faculte de Medecine, Paris, France.

Dr. Milivoie Kostitch, Prof. of Surgery, Faculty of Medicine University of Belgrad, Belgrad, Jugo-Slavia.

Dr. J. Alves de Lima, Prof. of Surgery, University of Escolo Polytechnics, Sao Paulo, Brazil.

Mr. Herbert J. Paterson, F. R. C. S., London, England.

Dr. Luis Tamini, Prof. of Orthopedic Surgery, National University of Buenos Aires, Buenos Aires, Argentina.

Physicians should make their reservations as early as possible by communicating with Hotel Cleveland or Convention Bureau—Cleveland Chamber of Commerce.

Program Committee

Dr. George Wm. Crile, Cleveland, Ohio, Chairman.
Dr. Lewellys F. Barker, Baltimore, Maryland.
Dr. George E. Brewer, New York, New York.
Dr. Henry A. Christian, Boston, Massachusetts.
Dr. John B. Deaver, Philadelphia, Pennsylvania.
Dr. Duncan A. L. Graham, Toronto, Canada.
Dr. James B. Herrick, Chicago, Illinois.
Dr. Jonathon C. Meakins, Montreal, Canada.

M. B. PECK,
Managing Director.

THE TREATMENT OF MEASLES BY IMMUNE SERUM

Dr. R. H. Cowley in Therapeutic Gazette in an article of the treatment of measles by immune serum says:

During the last two or three years a very large amount of research work has been done in the effort to find a solution to the measles problem. The brilliant results obtained by the Dicks and others in the conquest of scarlet fever inspired many to try what could be done to overcome measles. In a large institution like Berea College, where the students come largely from the mountains, measles is our worst enemy, for there are sure to be some 200 of our students who have not had it and no one has found a way of stopping it when it is once started.

Two years ago when measles broke out among our students I wrote to the Rockefeller Institute in New York asking if they had discovered anything new on the subject. They turned my letter over to Dr. W. H. Park of the New York City Health Department, and he wrote me saying that they thought they had some very important facts pretty well established but that they lacked the serum to carry on their research work. He said the serum must come from recent convalescents, and that since most of the adults had had measles they could find no source of supply. I wired him that we could supply the serum if he cared to send for it. The upshot of it was that he sent Dr. Freeman to Berea, and we shipped 100 pints of convalescent measles blood black to New York. Dr. Park used this serum in the large hospitals for children and in homes of the city in the effort to find out if it were possible to stop a measles epidemic when it was once started. When the children of these institutions were exposed they were each given 3 cc. of the serum. If the exposure had been some time before the dose was increased accordingly. He found that in most cases this dose prevented the development of the disease, and in the cases in which it did develop it was of a very mild character. He treated in all nearly 1,000 cases, and there were no complications in any of them. He wrote me of the results of his work last year and asked for more serum, but we had no measles and could not supply him.

This year the disease broke out in Berea again, and I wrote him immediately asking for full particulars as to how to collect and administer the serum. He was kind enough to send me directions, and we took blood from our first cases and used it on the subsequent cases.

The method employed for collecting the blood is as follows: Into a sterile bottle holding 500 cc. is put 7.5 grammes of sodium citrate dissolved in 15 cc. sterile water and 0.5 gramme chinosol dissolved in a like amount of water, and the blood is drawn into this bottle as follows: A piece of soft-rubber tubing is clamped around the arm above the elbow tight enough to stop the venous but not the arterial circulation. The veins should stand out prominently, but the pulse be definitely palpable. A drop of novocaine is injected intradermally over the vein and a small incision made with a very fine knife, as the needle to be used must be of large caliber to prevent clotting. The blood is drawn into the bottle and shaken thoroughly and then placed on ice. While the needle is in the vein enough blood is drawn into a small tube for the Wassermann test. If the bottle cannot be filled from one person it should be filled from another, so as to have the chemicals in the proper dilution, and when the corpuscles are settled the serum should be drawn off with a large sterile syringe and put into a sterile bottle when it is ready for use. We used routinely 3 cc. injected under the skin on the abdomen just as soon as we were sure from the Koplik spots that the case was one of real measles. In the 156 cases we had no serious complications, and the time of the disease was materially shortened. Where the symptoms were very severe we gave 5 cc. and in about six cases we repeated the dose, when the first dose did not seem to be sufficient. I have been treating epidemics of measles here among the students for twenty-two years and so have a pretty wide background to judge from, and I feel sure that in convalescent serum we have a solution for the measles problem until such time as a vaccine or horse serum antitoxin is perfected.

We did not use the serum with the same purpose as Dr. Park did. Our idea was that if we tried to stop the epidemic it would take a large amount of serum, and those treated would be immune for not more than

a month. We therefore waited till the students came down with the disease, and then give them enough serum to prevent complications, but still be sick enough to develop a sufficient immunity. We decided on 3 cc. as the initial dose, increasing this dose to 5 cc. in cases in which the temperature was high or the patient appeared very sick. In about six cases a second dose was given where it was seen that the first dose had not modified the symptoms sufficiently. On the other hand, we found that some of the cases recovered so quickly that it is doubtful whether they will have very much immunity. One boy with a temperature of 104.8° was given 5 cc., and the next day the temperature was normal and the eruption was all gone. He was perfectly well. Another case, with a temperature of 104°, very severe cough, and great prostration, was given 5 cc. She was some better the next day, but on the third day had a chill and beginning pneumonia. We gave her a second 5 cc., and the day following her temperature was normal and she was well. We had several similar, apparently desperate cases which were relieved at once.

Another patient had pneumonia of the unresolved type with the temperature hanging around 104° for a long time. When the temperature finally went to normal he was very weak and emaciated. After he had run a normal temperature for several days his temperature went up again, his ears began to run, and the mastoids were very tender. After several days of this with gradual loss of strength he broke out with measles. Because of his weak condition we gave him 6 cc. of the serum, and the next day his temperature was normal, his ears had cleared up, and he seemed much better. After several days the temperature went up again to 103.8°, the ears again began to run, and the mastoids were so tender that we could hardly touch them. Thinking that this might be a complication of the measles and not knowing what else to do we gave him 10 cc. of the serum. The next day the picture was entirely changed for the better, and he was soon convalescent.

Reports of individual cases seldom prove much especially in a disease like measles, which in uncomplicated cases runs a quite definite course and stops by crisis. We therefore compared the charts from the epidemic of two years ago with those of this year to see if we could prove by actual figures what we were almost certain of from observation. The following tables show this comparison:

	1924	1926
Average temperature on day of admission to the hospital	102.2°	102.3°
Average of the highest temperature reached by each case	103.9°	102.3°
Average No. of days in the hospital with temperature	5.64	3.2
Average No. of days in hospital	10.12	5.64
No. of cases with temperature above 104° after first day	43	11
Percentage of cases whose temperature increased after the first day	73%	44.5%

Next are given the average highest temperatures on the successive days:

	1st deg.	2d deg.	3d deg.	4th deg.	5th deg.	6th deg.	7th deg.
1926	102.3	101.8	100.4	99.2	98.7	98.6	98.6
1924	102.2	102.8	101.1	100.9	100.7	100.4	100.5

Next are given the temperatures of 104° or over which occurred on the various days:

	1924						1926			
Days	1st	2d	3d	4th	5th	6th	1st	2d	3d	4th
104	3	6	7	1	1	1	2	4	2	
104.2	1	2	1	1			5	1	1	
104.3		5	1				1			
104.6	1	4	2				1			
108.8		1	3	3			3		1	
105		2		1				2		
105.4			1							
105.6	1									

The above table shows that after the first day, which of course couldn't be influenced by the serum treatment, there were, in 1924, 43 cases in which the temperature went to 104° or over, while in 1926 there were only 11.

These statistics are compiled from about 75 cases in each epidemic. We had in all 165 cases this year, with no serious complications.

In addition to the tangible benefits which can be shown by figures there were others which were quite evident to us who had charge of the cases, and who had for years been in charge of epidemics of measles of the old-fashioned kind. This was especially noticeable where the cases were grouped in wards of 25 beds each. In former epidemics the coughing was the most distressing symptom, and was incessant and terribly rasping in character. This year there was almost no coughing. Of course we had no serum for the first few cases, and the nurses noticed the change in the coughing as soon as the first serum was given. Another thing noticeable was the almost total absence of earache. In former epidemics nearly half of the cases had more or less earache, and there were large numbers of running ears. In one epidemic I did 12 mastoid operations when it was over. This year we had a few running ears, but they were very few and there were no mastoid operations. In former epidemics there were always some cases of pneumonia. This year we had two which seemed to be developing pneumonia, but they cleared up over night with the second dose of the serum. The lack of eye trouble was also very noticeable. Usually many students have to go home after the attack of measles because they cannot use their eyes. This year there has been almost no such complaint. It must be remembered too that we used very small doses of serum. When our next epidemic comes I plan to follow a somewhat different course. I shall give each case as it comes in 3 cc. if the temperature is 102° or under; if it is 103° I shall give 6 cc.; if it is 104° I shall give 10 cc. I shall watch these cases daily, and if one of them does not improve satisfactorily I shall give more of the serum daily till the disease abates. In this way I feel sure that all complications can be effectually prevented.

CERTIFIED AND PASTEURIZED MILK

An investigation recently conducted by Maynard Ladd, Helen Evarts and Lucile Franks of the relative efficiency of Certified and Pasteurized milk in Infant Feeding led to the conclusions that the use of certified milk (raw) without orange juice or cod liver oil gave a considerably greater percentage of weight development than either pasteurized milk alone or pasteurized milk with orange juice and cod liver oil. Its protective properties against rachitic changes, as shown by radiograph, were clearly demonstrated, and dentition developed normally. It is quite possible that the greater efficiency of certified milk over pasteurized milk is due to the more exact and scientific feeding of the cows in the particular supply of certified milk used and not to the quality of rawness. If this should be proved to be the case, it would not necessarily follow that a similar superiority of results over pasteurized milk would obtain in all certified milks. The use of orange juice and cod liver oil as a matter of routine in all babies over three months of age, however fed, is therefore probably well justified—even though there is reason to believe that the highest grades of certified milk are sufficiently protective—but in their opinion a larger use of certified milk in infant feeding should be encouraged by the medical profession.—*Arch. Ped.*, 43: 380-385 (June 3, 1926).

TREATMENT OF LEUKEMIA BY INOCULATION OF MALARIA

T. Lucherini gives details of a case of leukemia successfully treated by the inoculation of malaria, 3 c. c. of blood from a malarial patient being injected subcutaneously. The case was that of a boy aged fourteen, his blood examination showing 250,000 leukocytes (73 per cent myeloblasts), and 1,500,000 red blood corpuscles, hemoglobin 24 per cent. After twelve successive attacks of malaria he was treated with quinine, and a month later his blood examination showed leukocytes 5,800 red blood corpuscles 3,880,000, hemoglobin 52 per cent, his general condition being greatly improved.—*Il Policlinico*, 32: 1745-1747 (December 14) 1925; abs. in *The Practitioner*, 116: 433-434 (June) 1926.

WHEN MAY ONE SPEAK OF THE CURE OF SYPHILIS?

Charles Fauquet, M. D., of Paris, France, in the July number of the Urologic and Cutaneous *Review* comments on this subject in detail. We quote:

Can this question which presents itself anxiously to every individual tainted with syphilis, which also presents itself to physicians for their patients' sake and which Prof. Fournier has chosen as the title of one of his articles (When is one cured?) receive an answer at the present time? It is this that I would study in these few pages based upon the most recent work of our specialists.

Syphilis, as we know, is a chronic disease the evolution of which, sometimes very long, is marked by periods of latence during which the syphilitic individual presents no visible symptoms, no disturbance and appears to enjoy the most perfect health. These periods of latence, the duration of which is very variable, are interrupted occasionally by the appearance and the return of symptoms which give no sign by which they may be anticipated, the gravity of which may be very great (aortitis, aneurism, tabes, general paralysis, etc.). Cases have been observed where a syphilitic individual after living 20 or 30 years without symptoms has shown a sudden recidivation of cutaneous or mucous syphilids. A married syphilitic individual after having many healthy children has borne one or two children plainly heredosyphilitic (Majocchi, Pellyzari), or has shown gummatous lesions, a fact which shows that the infection was not cured but was merely in a quiescent stage.

How is it possible to explain these periods of mutism in syphilis? Should one think as Commasi, of a cyclic biological involution of the treponema more or less analogous to that of the plasmodium of malaria? But nothing seems to permit of this hypothesis, for no one has demonstrated morphological aspects of the parasite different from the spirillum discovered by Schaudinn. Can it be admitted that the treponemata, weakened in virulence either by treatment or by the natural defensive power of the body, conceal themselves in certain organs or in the cicatrices of old lesions where they live in a parasitic state with their virulence so attenuated that they are incapable of procoking a clinical sign or a reaction in the tissues which they inhabit?

This last hypothesis seems to us nearer the truth. Some authorities have been able to bring evidence of treponemata remaining latent in the cicatrices in cutaneous pigmentations following syphilitic lesions in evolution. Neisser succeeded in infecting the peritoneum of apes by inoculation with extracts of organs of animals in the latent stage of syphilis (bone marrow, spleen, liver).

Can it be also that the body is able to engulf the treponemata at the stage of life when they are covered with fatty substances which prevent their injurious action for a certain time upon the organism of which they are the guests?

We are also ignorant of the influences causing the awakening of the treponemata and their resumption of virulence. It has been claimed that local traumatism is the cause (Varnowsky, Pasini, Vignolo-Lutati, Gougerot, Lingmann), also a diminished resistance of the body due to an intercurrent disease (influenza, Pellizzari) or a specific treatment which was too weak awakening the parasite instead of destroying it (Gennerich, Herxheimer, Vernes, Queyrat). The hypothesis has also been advanced that the presence in the body of numerous virulent treponemata leads to the formation of immunizing substances which act in destroying or attenuating the treponemata which disappear from the circulation and assume a latent form of life in the organs where these substances have less power to act upon them (dead angles of Ehrlich). Eberson asserts that the serum of an old syphilitic has an inhibiting action on the movements of the treponemata, an action which the serum

of an individual affected with active syphilis does not possess.

One may admit with numerous authorities that these immunizing substances or antibodies present in certain individuals are sufficiently abundant and active to cause the complete disappearance of the parasites and produce the cure of syphilis spontaneously. This complete disappearance of the treponemata, it is logical to admit, may be obtained in certain cases by sufficient early and intensive treatment.

This seems to follow from the very large number of re-infections which have been reported from different countries since the introduction into the therapy of medicaments as active as the arsenobenzenes. Cases of re-infection have even been noted after very short treatments, generally considered as insufficient (Pellizzari, Sensini, Brossarello). Tommasi cites the case which he presented at the XVIII meeting of the Italian Society of Dermatology and Syphilography of a patient who had received only 1.80 grams of mercury in 18 months of treatments and who had a re-infection a short time thereafter. Milian and Lafoureada reported the observation of a patient who recovered from a first attack of syphilis after four injections of novarsenobenzol (2 of 0.30 cg. and 2 of 0.45 cg.) and one single injection of a soluble salt of bismuth. Eight months afterwards a new infection was noted, a re-infection which the authors regarded as undoubted.

Loccapere also reported a case of syphilis cured by one single intramuscular injection of 0.60 cg. of 606; ten years later this patient had a re-infection. Sabauraud cited a case of the same kind and concludes that "primary syphilis treated without delay is rapidly curable and this in a great number of cases." One may admit *a priori* that syphilis can get well. In what does the cure of syphilis consist? We cannot do better than recall the definition given by Commasi: "The cure of syphilis" he writes, "is the sterilization of the disease, the death and the disappearance of all the treponemata in their known form and their eventual forms, not overlooking the resistance or the superficial or deep saprophytism in the circulation or in foci more or less hidden or nests of latence."

In admitting that the cure of syphilis is realizable, have we an infallible means of knowing and of being able to certify that a syphilis is cured and is not merely offering a period of latence or mutism?

The age of syphilis does not seem to have a great importance since one sees sufferers who are taken late with symptoms often contagious after a latence of many years (13 years in one case of Fournier; 50 years in another case of Balzer and Levestra). Nevertheless, the more remote one is from the beginning the more it seems one may visualize the possibility of a cure.

It is the same with the *gravity of the infection.* It is moreover difficult to evaluate this gravity. Does one base one's opinion upon the repetition of the symptoms or upon their gravity? Is a syphilis which reveals itself in numerous cutaneous or mucous manifestations more grave than a syphilis which attacks the nervous system? The rapidity of the clinical and serological recidivation in spite of a normally conducted treatment, should make one think of a serious syphilis. It is the same with more or less precocious symptoms generally considered as tardy (gummata, visceral lesions) and in the resistance of a positive serological reaction to pass over to negative.

The treatment of the patient constitutes a more solid argument if it has been serious and sufficiently prolonged. But does one not observe syphilis which resists the most properly conducted treatment?

The *general condition of the patient* has also a certain importance. It is evident that in order for one to be able to speak of a cure the patient should not present any symptoms in evolution nor have presented any for several years. A complete clinical examination of the subject is then necessary without forgetting the heart and vessels (auscultation and radioscopy), the investigation of the reflexes, of the arterial tension and even the search for the treponemata in the lymphatic ganglia.

We now come to two most important criteria: The serological examination of the blood and the thorough examination of the cephalo-rachitic fluid.

Interrogation and clinical examination do not enable us to decide. Will the serological examination do any more?

1. What value has a *positive* seroreaction during the course of an asymptomatic syphilis? We do not share the opinion of certain authors who think that a positive reaction is proper at this period because it signifies the presence of antibodies in convalescence. For us and for the great majority of syphilologists a positive seroreaction in the course of an asymptomatic syphilis denotes syphilis in activity and consequently not cured.

2. What is the value of a negative seroreaction in the course of an asymptomatic syphilis?

a. If it is a matter of recent syphilis a *negative* result cannot serve as a basis. One sees frequently—without the influence of treatment—theseroreaction becomes negative and later turn to positive.

Fruhwald has shown by the inoculation of animals the contagiousness of the blood of certain syphilitics who may have a negative Wassermann.

b. If the matter is one of old syphilis dating back to three years and more the seroreaction may have a very great importance. At this period according to statistics the Bordet-Wassermann is positive in about 30 per cent of cases, negative in 70 per cent. But among the latter 19 per cent of cases vary in reaction, becoming again positive with or without clinical manifestations. Consequently the negative character of the reaction does not permit the assurance of a cure, but it may be an important presumptive sign.

A positive reaction is considered as a symptom of syphilis, a more sensitive sign than the clinical symptoms, for very often the reaction becomes again positive before the return of clinical symptoms. Commasi correctly compares it to the indicator of an apparatus which amplifies and makes visible the presence of symptoms which clinically are not perceptible to our senses. It is the bob of a pendulum which renders our

clinical perception more acute to discover the existence of manifestations which are invisible by our ordinary means of investigation.

All of this applies to the serological procedure most commonly employed, the Bordet-Wassermann reaction. But sometimes the results of this reaction are insufficient and more sensitive methods have been sought for. Unfortunately, every augmentation of the sensitiveness is accompanied by a corresponding diminution in the specific character. It is now the practice to check up the Bordet-Wassermann with other tests (Hecht, Jacobsthal, Demonliers, flocculation procedures, etc.).

Among the flocculation procedures we give preference to the syphilimetric method of A. Vernes, Director of the Prophylactic Institute of Paris. It has the great advantage of being the most precise method. It gives constant and identical results even in the hands of different serologists in different laboratories, which no other serological methods do.

Instead of seeking to augment the sensitiveness of these serological techniques, it has been sought to sensitize the patients in some manner. *Reactivation* and *provocation* have been employed for this purpose.

Reactivation (Gennerich, Milian) is a phenomenon analogous to the Herxheimer reaction.

Provocation (Vernes) is based upon the phenomenon of revivification or lighting up of latent foci of infection present in consequence of an insufficient course of treatment.

The object of these two methods is to obtain a serological exaltation. The results have certainly a greater importance than those afforded by sero-reactions alone, nevertheless they do not suffice to determine the cure of syphilis.

The examination of the cephalo-rachitic fluid is the indispensable corollary to the serological examination of the blood. The possibility of having a blood-negative seroreaction with a positive seroreaction of the cephalo-rachitic fluid has necessitated the practice of lumbar puncture when one would know if a syphilitic may be considered as cured.

A few years ago great hopes were based upon the cutis and introdermal reaction to facilitate the diagnosis of the recovery from syphilis. In fact, the employment of these procedures with the *Syphiline* of Meirowsky, the *Luetine* of Noguchi, of *Pallidine* of Fischer Klausner, has been little by little completely abandoned in consequence of the inconstancy of the results, and their contradictory character.

From all of that which goes before, what may one conclude? There does not exist as yet one single clinical or laboratory sign capable of certifying that an individual once tainted with syphilis is definitely free from his affection. This is not to say that syphilis is not curable. Almost all syphilologists commencing with Fournier, admit that the cure of this malady is possible. Comassi indeed says this "termination is the most common for well treated patients." Syphilis treated energetically at the prehumoral stage in particular, gets well almost always. Boas speaks of 231 cures in 284 cases treated under these conditions. The patient cited by Carnowski who having acquired a chancre at the age of 8 years, ceased to have recurrences after 15 years and was always well and vigorous up to his 81st year, could well be considered as cured. Artz gives a percentage of 85 per cent of cures, Folland of 40 to 90 per cent, Lesser 100 per cent.

If we have not the scientific proof permitting us to deliver to an individual a certificate of the cure of syphilis, we have nevertheless often a group of clinical and laboratory signs which constitute, when they are taken together, an important array of presumptions, permitting the belief that recovery has been obtained. This is the case of those syphilitics in whom the infection dates back many years who have not presented any symptoms for several years, who have had a certain number of negative blood sero-reactions during two or three years and who have persistently a normal cephalo-rachitic fluid. It would well appear that one could permit marriage and procreation to such as these.

THE DOCTOR'S PLAYTIME

As a class, doctors do not play enough. Their hours are long, their work depressing, and their opportunity for reaction scant. Their leisure time is apt to be devoted to medical meetings, perusal of medical literature, or study of one kind or another. Their friendships are largely among men of their own profession —when, indeed, they have time to give to friends— and all their activities center around their work.

Yet it must not be forgotten that every man needs recreation and rest if he is to remain healthy and preserve a sane attitude of mind. That "tired feeling" is more apt to come from "staleness" than from overactivity. Among no other class of professional people is a rested body and a clear mind more essential than with the men on whom other folk's lives so often depend. The doctor owes it not only to himself and to his family, but to his patients to care for his own well-being.

A hobby totally removed from the world of medicine is a most excellent thing for any physician to develop. In Paris recently the "Salon des Médecins" presented examples of paintings and sculpture executed by physicians. It was a good idea, and one worth developing in this country. Other men find their outlet in church work, clubs, golf, gardening, and varied activities. It matters not so much what vent the play instinct may have, it is the having *something* outside the regular routine to occupy the leisure hours pleasurably that is necessary to a well balanced and normal life.

The physician is about the only professional man who is on call all the time, day and night, and in this period when the eight-hour day has been recognized as practically standard for the laborer, it would appear justifiable for doctors to consider some plan that will give them certain hours for their own without fear of being disturbed. This has been one of the strong appeals of the specialties, for the specialist can regulate his hours of work better than can the general practitioner. It is also one of the strongest arguments in favor of group medicine. The members of a clinic can take their turn attending to the night work, so

that all will have some opportunity to devote to their physical and spiritual betterment—in other words, to play.—*The Atlantic Medical Monthly.*

CURE OF NOMA WITH SULPHATE OF COPPER

F. Kaspar, writing in the *Wiener klinische Wochenschrift* of May 6, 1926, claims to have cured a case of noma by the simple use of a solution of copper sulphate. He was led to test this remedy because in his bacteriological work he found that it arrested the growth of Vincent's fusiform bacillus, now recognized as at least one cause of this dread disease. This one result he regards as sufficiently brilliant to report, but he has since learned that he has been anticipated in the use of the remedy by modern Russian physicians who have cured a considerable number of cases. The 10 per cent aqueous solution is used. Application of this solution to the gangrenous area of the cheek was followed in the author's case by the formation of a line of demarcation announcing that the disease process had been arrested. The author regards the Vincent fusiform bacillus acting alone as the cause of but one type of noma. In other cases the symbiosis of this organism with a spirochete appears to be the cause, and in this type the author fears that the copper solution might not cure as it has no power over the spirochete. Under these conditions he would add salvarsan locally and intravenously and would expect a cure. Salvarsan in turn has no power over the fusiform bacillus. The latter when it occurs in noma has an astonishing polymorphism and its simulation of other pathogenic bacteria has probably led to reckoning some of these as able to cause the disease. As a matter of fact it is by no means unlikely that quite different organisms can produce the same gangrenous affection in the poorly nourished children who contract it. The author's patient chanced to be an adult, which is an extremely rare coincidence, for of 413 cases collected by Bruns only 11 were in individuals over 15 years of age. In the author's case the two others quoted by him, also in adults and both fatal, the noma followed extraction of a tooth. The mortality of the disease in the past has reached 80 per cent, but recent cases are showing an improvement on this figure.

TREATMENT OF CERVICAL CATARRHS WITH ANIMAL CHARCOAL

Fr. Chr. Geller (*Zentralblatt für Gynäkologie*, January 16, 1926) asserts that specific therapy is usually directed toward the vagina in catarrhs of the uterine cervix, and this is the very reason why such treatment is often unsuccessful. The cervix itself is much too often neglected. This neglect of the cervical mucosa is based upon the fear of spreading the infection after intracervical therapy. But this danger has been too much overestimated. The menstrual hyperemia, desquamation and regeneration of the mucosa is a powerful factor in the prevention of the spread of the infection.

Urged on by the favorable results of the socalled biological therapy of leucorrhea, the author has attempted to treat this condition most conservatively by making the bacteria and their toxins innocuous and eliminating them. The intracervical methods of treatment used heretofore have the disadvantage that they injure the cervical mucosa either mechanically (curettage), thermically (cauterization) or chemically (cauterization by chemicals) and so reduce the natural powers of resistance of the tissue. The author has tried an indifferent therapy patterned after the power insufflation of the vagina and the bolus and charcoal treatment of infectious intestinal catarrhs. The curative power of the pulverized animal charcoal is due to the marked adsorption of the bacteria and their toxins and of the wound secretions. Not only are the bacteria sucked up, but the conditions of life for bacteria are made difficult by the simultaneous drying of the tissues. There is no injury to the cells of the tissues and a hyperemic stimulus upon the tissues is exerted by the abstraction of water.

The only indication for this form of treatment is chronic cervical catarrh. The cases should be carefully selected. Positive gonorrhea is a contraindication, as is also adnexal inflammation.

For the insufflation of the powdered charcoal the author has devised a special cervix powder blower. The instrument and the charcoal must be sterilized. The technic or insufflation is the following: The patient and the physician are prepared as for a curettage. About a quarter of a teaspoonful of powdered charcoal is placed into the insufflator. The vagina and cervix are disinfected and dried as much as possible. The cervix is dilated with a Hegar dilator and the insufflator is immediately inserted into the cervix. Two or three pressures are then made on the hand bulb, after which the insufflator is withdrawn.

COMMENTARIES ON GONORRHOEA.

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It is not to be expected that anything new or startling can be presented in this contribution to the already existing voluminous literature concerning a disorder which probably antedates the history of humankind. Were the ancient code of Hammurabi (2250 B. C.) available for perusal, doubtless therein might be discovered many interesting data anent the "running issue of the flesh" which centuries later became familiar to students of biblical lore. The papyrus of Ebers (exact period uncertain) is said to contain an accurate description of the malady, the various complications and sequelae which under certain circumstances might be expected to ensue, and also local and general therapeutic measures indicated for possible alleviation or cure. Practically every ancient medical historian, whose writings are available for review, discusses in no uncertain terms the pernicious and oftentimes disastrous effects of "the venereal," thus demonstrating that the importance of the disease, in relation to individual life and health, has been recognized since the earliest historical record.

In the not far distant past someone facetiously

observed that "amorous conquests, seemingly full of poesy, oftentimes ended in prosaic injections of sulphate of zinc or doses of copaiba." While the inherent accuracy of this adage remains unchanged, upon the basis of accumulated information certain additions seem requisite, viz., the urethral introduction of silver nitrate (injections, instillations, pencils, crayons, etc.), the injection of solutions of bismuth, formalin, potassium permanganate, "kerosene," the various silver salts, and hundreds of other drugs of doubtful efficiency, in various combinations and dilutions; the internal exhibition of oleum santali, oleum terebinthina, belladonna, bromides, methylene, blue, hyoscyamus, etc.; the local application of sinapisms, stupes, cataplasms. Nearly every drug included in the revised pharmacopeia has at some time been recommended for external or internal administration in the attempted alleviation or cure of gonorrhea, but so far as at present known no drug nor combination of medicinal agents has proven satisfactory, curative, and universally applicable. Noeggerath declared that men never recovered from gonorrhoea, and that nine-tenths of the women who married men who had been thus infected developed painful and incurable inflammatory lesions of the uterus, oviducts, and ovaries. Many other older observers expressed similar pessimistic views which are now known to be only partially true. The facts remain, however, that despite treatment by the most modern methods the disorder not infrequently persists many months, with remissions and exacerbations of symptoms, passing almost imperceptibly from the acute to the chronic stage, involving successively the posterior urethra, the prostate gland, the epididymes, the seminal vesicles, sometimes the testes, the bladder, and the renal structures. (Very, very rarely the bladder or kidney involved in a true gonococcal process. Editor). The reason for chronicity in the majority of instances is not inaccuracy of the medical attendant in the exhibition of medicinal agents nor inattention of the paatient, but the impregnability of the regions involved. Owing to the anatomical arrangement of the urethral and prostatic structures the "enemy may entrench himself" therein and exist indefinitely in comparative safety, because the regions present innumerable fortresses impregnable to either external or internal influences. If antiseptic or germicidal drugs locally applied could by any possible means be made to reach the deepest recesses of the enemy's stronghold without inflicting perhaps irreparable damage upon the host, that method of management might be efficient, sufficient, satisfactory, and universally successful; but can the most optimistic observer state with any degree of veracity that such an eventuation may be reasonably contemplated in every instance? Internal medication, through the media of the blood and urine, must remain of questionable utility; the internal administration of drugs in the treatment of gonorrhoea, in so far as the specific action of such agents is concerned, practically represents an unknown or at least an uncertain quantity. Yet there are otherwise apparently intelligent practitioners of medicine who contend that the disorder may be cured by the internal exhibition of drugs unaided by local measures. Such practitioners have been known to inform patients that gonorrhoea was a trivial affair and could be cured within a few days or weeks. On the contrary, however, it is believed there is abundant evidence to substantiate the statement that gonorrhoea is one of the most obstinate, persistent and formidable disorders the physician is called upon to treat, and that the complications and sequelae which may ensue are numerous and oftentimes dangerous to life. The following incomplete list of possible sequelae are offered in proof of the foregoing assertion:

COMPLICATIONS AND SEQUELAE OF GONOCOCCAL INFECTION IN MALES AND FEMALES.

Males	
Chordee,	Peritonitis,
Phimosis,	Proctitis,
Paraphimosis,	Sterility,
Balanitis,	Arthritis,
Balanoposthitis,	Perirenal abscess,
Cowperitis,	Uremia,
Prostatitis,	Urinary retention,
Prostatic abscess,	Iritis,
Seminal vesiculitis,	Neuritis,
Epididymitis,	Myelitis.
Orchitis,	
Stricture of Urethra,	Females
Exostosis.	Vulvitis,
	Bartholinitis,
	Vaginitis.
	Vaginal ulceration,
	Endocervicitis,
	Endometritis,
	Metritis,
Common to Both Sexes	
Urethritis,	Salpingitis,
Urethral abscess,	Pyosalpinx,
Urocystitis,	Ovaritis,
Pyelitis,	Hydrosalpinx,
"Surgical kidney,"	Hematosalpinx,
Pyemia,	Ectopic gestation,
Ophthalmitis,	Hematocele,
Urinary suppression,	(a) extraperitoneal,
Pelvic abscess,	(b) intraperitoneal,
Inguinal adenitis,	Puerperal septicemia,
Endocarditis,	Adherent placenta.

Careful scrutiny of such an array of possibilities should certainly be sufficient to contravert the erroneous prevailing impression that gonorrhoea entails no serious consequences to those who may become its unfortunate victims. The claim is not made that complications and sequelae are unpreventable, nor that any of them will necessarily supervene during either acute or chronic gonorrhoea, but they represent possibilities which must be considered in estimating the morbidity and mortality incident to an exceedingly common affection still regarded in some quarters of minor importance, self-limited, or curable within a few days. It is noteworthy that the germs of Neisser have been isolated and demonstrated in infected tissues regardless of the anatomic situation from which extirpated, thus completing positive etiologic and pathologic findings.

An interesting but unfortunate commentary has already been suggested, i. e., there are still physicians who positively assert gonorrhoea is purely local and self-limited from which the patient may be expected to recover within a reasonable time (with or without treatment) provided quietude in the recumbent position be enjoined. If the writer be not mistaken a statement in practical accord

with the foregoing appeared in a textbook on venereal diseases compiled but a few years ago. If the author ever corrected his obviously erroneous assertion it has escaped notice. False statements by physicians or others in text books and elsewhere with respect to venereal disease, whether made deliberately or otherwise, are always productive of harm. Truth and not falsehood is demanded by the public, and this especially applies to venereal reservation. The words "syphilis" and "gonorrhoea" are no longer unfamiliar and need not be whisperingly uttered before public gatherings. Lectures concerning the evils and dangers incident to social diseases have even been delivered from pulpits during the educational campaign which has been in progress, and it is hoped much benefit from a public health standpoint has accrued therefrom.

There is ample evidence to prove that gonorrhoea is not self-limited; that it may assume a chronic form and persist for many years, that the infective organisms may become entrenched in impregnable anatomic situations and there remain quiescent (latent) for an indefinite period; that recrudescence may occur at any time and the disease assume its original virulence; that transmissioin of infection has been known to happen many years after the patient had been pronounced at least clinically cured. It is true that many infectious diseases subside within a given time without treatment provided the patient possesses the requisite resisting powers; but if gonorrhoea ever subsided without treatment, or if a spontaneous cure has ever been recorded, the literature fails to reveal such information.

As remarked by the writer on numerous previous occasions, the prevention of dissemination of venereal disease concerns the physician as well as the layman, the moralist as well as the statesman, the philosopher as well as the fool. These are days of preventive medicine, this branch now being accorded greater prominence and importance than many others, and gonorrhoea is distinctly preventable. Its dissemination, however, is not altogether traceable to confirmed prostitutes. In every large city in Christendom there are hundreds of amateurs, street-walkers, clandestines, "occasionals," rooming-house-girls, etc., to whom the spread of venereal disease is largely attributable. There are doubtless many men who would not consort with professional prostitutes, who perhaps might otherwise lead exemplary lives, but who are attracted by the wiles of the amateur demi mondaine and in subsequent dalliances acquire and convey infection to the conjugal couch. The novice does not recognize the financial importance of cleanliness and neglects this feature both before and after becoming diseased, which is untrue of the majority of her professional sisters. Indeed, it has been said that the professional prostitute might teach an important lesson in cleanliness which many virtuous women strenuously and assiduously neglect. After coitus (and sometimes before) she takes a vaginal douche of warm water, with or without the addition of an antiseptic, a procedure which is practically unknown among many presumably virtuous and law-abiding females. Sexual cleanliness is an important item in striving toward the acme of healthy sexual living, a matter which is too often overlooked or ignored in the connubial state. Doubtless many men have been at least partially justified in forsaking the conjugal couch to seek sexual satisfaction elsewhere because of slovenly, filthy, neglectful, and sexually unappreciative connubial partners. The professional prostitute recognizes that health and cleanliness are essential to her success, and after sexual congress the vaginal douche, bathing, micturition, etc., are more religiously observed than the prayers of the righteous. However, those who bask in the sunshine of the demi mondaine are still in danger, because this routine of cleanliness is not an absolute safeguard against infection provided venereal disease be present in contagious form. "He who thrusts his hands into the fire is almost certain to be burned."

Prior to discontinuance by judicial authority of licensed houses of prostitution, in cities where periodic medical inspection was enforced, the liability to infection was slightly lessened; but the dissemination of venereal disease was not materially diminished, since inspection did not include street-walkers and clandestines. So far as the writer is informed governmental control of prostitution wherever attempted has resulted in dismal failure and the recent "national spasm of virtue" appears to be no exception to the rule; it has resulted in decreasing professionals and correspondingly increasing the more dangerous clandestines; and instead of diminishing the incidence of venereal disease the converse appears to be true, the reasons for which are perfectly obvious. It is well recognized by those who have accorded the subject consideration that the danger of contracting venereal disease is less from the professional prostitute than from the novice, but the only absolute safeguard is "not to submit one's self to the source from which infection may be acquired," i. e., do not consort with members of the Cyprian sisterhood, either professional or clandestine.

While it is frankly admitted that national, state and municipal legislation is utterly impotent as a conserver of public morals, yet it seems a strange commentary that there exist stringent legal enactments for prevention of contagious and infectious diseases and rigid quarantine regulations to prevent their dissemination, yet these laws and regulations appear inapplicable to venereal diseases which may attack any organ, structure or tissue embraced within the human economy, which may devitalize the individual and imperil the integrity of society itself. That venereal diseases are prevalent in every stratum of society there is abundant evidence to prove; they are insidious and deadly maladies, infectious, inoculable, contagious, transmissible, yet they are not included in the list governed or re-

stricted by legal enactment and quarantine regulation. The leper, from time immemorial, has been isolated or ostracised; the mildly insane individual is arrested and forcibly detained where harm cannot be inflicted upon himself or others; yet those more dangerous than either the leper or the mild lunatic are allowed freedom to disseminate and perpetuate disease, pestilence and death throughout the length and breadth of the land.

The commentary appears particularly pertinent that perhaps the most prolific present operating agency in promoting sexual promiscuity and dissemination of gonorrhoea (also syphilis in lesser degree) is the multiplicity of automobiles. There exists valid authority for the statement that, despite its beneficent influence in legitimate directions, the automobile has been one of the greatest primary operative factors in the destruction of adolescent morale the history of the world has known; that it has also been largely responsible for increasing the most dangerous form of cladestine prostitution and the incidence of venereal disease has been made apparent by investigation and inquiry. Automobiles have become veritable houses of prostitution since red lights no longer shine along familiar by-ways. The damage inflicted upon youthful humanity in the production of moral obliquity through the agency of the automobile must be written in colors of decided crimson.

Only specialists in this department of medical practice realize the extent to which gonorrhea (also syphilis) has permeated the social fabric; the prominence of the individual in the community, the church, in society, bears no more relationship to the incidence of venereal disease than "the flowers that bloom in the spring." Gonorrhea is no respecter of persons and like virtue and vice is oftentimes discovered in the most unexpected places:

> It attacks alike the rich and the poor;
> And the prominent as well as the obscure.

No age, sex or race can be considered specifically diseases, which are now being discussed without exempt from its pernicious influence. And the attempts to prevent its dissemination by governmental, state and municipal authority to the contrary notwithstanding, the disease will probably prevail in greater or lesser degree in every community until the supervention of radical, fundamental changes in human nature which shall render sexual promiscuity a negligible quantity.

NOTHING LEFT

Alice—"I hear Jack has broken off his engagement with Gladys. How did she take it?"

Virginia—"Oh, it completely unmanned her."

—*American Legion Weekly.*

THE LUCK OF SOME MEN

Frank—"I don't think my wife could tell a lie in twelve months."

Guile—"You're fortunate. My wife can tell a lie the instant I utter it."—*Sydney Bulletin.*

LOCAL ANESTHESIA

Report of the Committee of the American Medical Association Appointed to Investigate the Toxic Effects of Local Anesthetics; Stomatological Section.

Henry Sage Dunning. Dental Items of Interest. April, 1926, p. 264.

The Committee has shown that procain (Novocain) is the safest anesthetic if employed properly. Large doses of epinephrine are considered to be unsafe in conjunction with a local anesthetic. The use of stock solutions was deemed inadvisable. Measured quantities of a known strength solution should be prepared at the time of injection, or sterile solutions in ampules employed.

Regional Anesthesia in Major Surgery. Payton R. Denman. American Journal of Surgery. April, 1926, p. 34.

A quantitative comparison of the toxicity of the alkamine esters of aromatic acids used as local anesthetic with the details of the intravenous method, using rabbits, was developed and adopted for the determination of the toxicity of Novocain. The minimal lethal dose of Novocain by this method is 50 milligrams per kilo body weight, which represents a dose of 3.75 grams (58 grains) Novocain powder for a man weighing 75 kilos (165 pounds) when injected intravenously as a 2 per cent solution.

For infiltration anesthesia in man Novocain may be freely injected if slowly done, in properly prepared solutions of 0.5 per cent to 1.0 per cent strength in almost unlimited quantities, provided care is taken not to inject the solution intravenously. Babcock has repeatedly used 500 cc of a 1 per cent Novocain solution in a single operation. Farr has employed 45 grains (3 gm.) in 0.5 per cent solutions without untoward symptoms, and Meeker employed 500 cc in 0.5 solution without toxic manifestations.

The author has done practically all of his operations under regional anesthesia and in many cases has used as much as fifty grains of Novocain without the slightest toxic symptoms. He feels that Novocain solution can be used in sufficient quantity to do any major operation, with perfect safety.

The patients are rational at all times. Shock is almost unheard of, even in the most grave procedures. Nausea, vomiting and gas pains are practically nil. The patients can take nourishment the same day of operation. The bowel and kidney functions are undisturbed. A sufficient number of cases have already been reported to give regional anesthesia a high place in the realm of anesthetic methods, and it is suggested that anesthetists and young surgeons of today lose no time in thoroughly acquainting themselves with its technic, scope and utility.

Sciatica Treated by Epidural Injection of Novocain. W. B. Marbury. Virginia Medical Monthly. Sept., 1925.

The author's technic is simple, requiring no previous preparation of the patient, and may be utilized in the home, hospital or office. The solution is prepared by sterilizing 0.25 Gms. Novocain in a small quantity of physiologic saline and then adding enough of the latter

to make 50 cc. The solution is injected slowly. If one injection does not relieve the pain, repeat in two days. His conclusions are as follows: (1) The pathology of sciatica is not definite. (2) About 65 per cent of the cases treated by the injection of Novocain solution are either cured or greatly improved. (3) The best results have been seen in the cases which had the most pain. (4) The injection is simple and without danger, if properly done.

Sacral Anesthesia. Edward J. Ottenheimer. Boston Medical and Surgical Journal. Dec. 10, 1925, p. 1094.

While it seems fairly certain that 30 to 50 cc of a 1 per cent solution of Novocain are sufficient to produce adequate anesthesia for many of the genito-urinary and rectal operative procedures this amount does not allow for the more extensive operations which can be done safely under sacral anesthesia. In this series the best, and most consistently successful anesthesia, was obtained with 90 to 100 cc of a 1 per cent Novocain solution and there were no untoward effects observed from this amount. The author is inclined to infer that large quantities of a weak solution are superior to smaller quantities of a more concentrated solution, particularly if a high anesthesia is indicated. If the resistance becomes very great after 40 to 50 cc have been introduced it is injudicious to continue to introduce the solution under extreme pressure.

Nitrous Oxid and Local Anesthesia in Abdominal Surgery. P. K. Gilman. American Journal of Surgery. Jan., 1926.

The advantages of combined anesthesia are striking. Manipulations are gentle; hence shock is largely eliminated. It is not rare for the patient to leave the table with an unchanged blood pressure. The patient is conscious by the time the postoperative toilet is complete. The often distressing and prolonged recoveries of consciousness from ether are eliminated. Postoperative nausea and vomiting are practically absent, except at times for an immediate small emesis. Bowel paresis and accompanying distension and gas pains are markedly reduced in their frequency of occurrence. Combined anesthesia patients take fluids earlier, may be nourished sooner than the ordinary ether patient, convalesce more rapidly and suffer less general postoperative distress.

Anesthesia and the Blood Urea. Abadie, Baldous and Dornier. Presse Medicale. March 27, 1926, 34:387.

The blood of twenty-six persons operated under intraspinal anesthesia was examined. The urea content appeared increased for about a week. It may be due partly to the surgical trauma, since different toxalbumins and nucleins are released from the injured tissues. This explains why azotemia is often more pronounced after major than after minor operations. Affections of the liver and kidneys, as well as old age, may also be responsible for the high blood urea after an operation. The degree of the azotemia depends to a certain extent on the anesthetic used. It was considerably higher with stovaine than with procaine. It is probable that the drugs act first on the sympathetic system, while the kidneys are involved secondarily. This does not interfere with the advantages of the intraspinal method, if the choice of anesthetics is made carefully.

Suprapubic Prostatectomy. G. Cattaneo. Archivio Italiano di Urologia. March, 1926, 2:293.

In the author's service, the mortality of over a thousand Freyer operations has dropped from 14.38 per cent in 1909 to 1 per cent in the last hundred cases. He tabulates the details in this last group to show the outcome according to the indications and technic, warning that prostatectomy must not be done as an emergency operation. He prefers the two-stage technic. Calcium chloride arrested postoperative hemorrhage in 50 per cent of his cases, rendering tamponing unnecessary. Local anesthesia for the epicystotomy and epidural for the prostatectomy, refraining entirely from general anesthesia, have contributed to the favorable outcome.

Correspondence

EVERY PHYSICIAN IN ILLINOIS HAS A DUTY TO PERFORM. VACATION PERIOD IS THE TIME TO DO IT.

Silvis, Ill., July 23, 1926.

To the Editor: Now, this year, while there is no legislature in session, we should see to it that every prospective legislator and the public so far as it is possible to do so, comes to understand (at home or on the street) one thing, which is a fundamental point, namely: That a "school of healing" is one thing and that it makes claims for "special methods of cure"; while a health expert is another thing, claiming nothing but that he has information on and access to the health history of the world for some twenty-three hundred years, and that he stands ready to use every worthy thing in that history so far as he is able.

It is fundamental that the "medical profession" is not a "school of healing" and IS a group of "health experts." It is *not* one of the schools of healing referred to in law. All of the faulty decisions I have read have assumed that it was one of the "schools of healing" and have been led to faulty conclusion by that erroneous assumption.

CORRECT PRONUNCIATION

"James, have you whispered today without permission?"

"Only wunst."

"Leroy, should James have said 'wunst'?"

"No'm, he should have said 'twist'."

—*Carnation.*

Original Articles

THE TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM*

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The aim of this paper is to point out the possibilities and limitations of treatment in neurosyphilis, to what extent treatment influences the prognosis and, above all, to emphasize that an ounce of prevention is worth many pounds of cure. We must first of all be clear as to what our problems are.

Primary syphilis, the chancre, never attacks the nervous system. During the secondary stage, even very early, before the rash has appeared and while the chancre is still present the spinal fluid may show increase in proteins and cells. In 221 such cases, with only the chancre present, Wile and Hasley[1] found globulin increase in twenty-five and cell increase in twelve, though the Wassermann test was positive in only eight. Cornaz[2] found increased cell count in 35 per cent of cases of syphilis before the appearance of skin and mucous membrane lesions, and Nicolau,[3] in eighteen of fifty-one such cases. Eleven of these eighteen patients showed pupillary inequality. Nicolau points out that this early lymphocytosis is resistant to a treatment sufficiently vigorous to suppress all secondary manifestations and to keep the Wassermann reaction negative. This is a very important point, showing that a physician may fool himself in thinking he has "aborted" syphilis by early treatment when neither secondaries nor positive Wassermann reactions appear. Later in the secondary stage spinal fluid changes —still in the absence of neurologic symptoms— become more frequent. It has been suggested that the persons showing these early spinal fluid changes are the ones who later develop paresis and tabes. Fordyce[4] in particular has advocated this view. It is probably not correct, however, for those who, like Wile of Ann Arbor, as a routine examine the spinal fluid in early syphilis find that it shows signs of inflammatory reaction so frequently that it is more reasonable to conclude with Nonne[5] that this reaction is part of the general roseola and is protective and favorable. Nonne knows of many paretics who had had normal spinal fluid until the onset of mental symptoms, while careful scrutiny of a large number of cases with early syphilitic meningitis failed to show that any of them subsequently developed paresis. Supporting himself by observations on man by E. Hoffman, and on rabbits by Plaut and Mulzer, he claims that apparently normal spinal fluid, without even a positive globulin reaction, may also be infectious.

However, the emphasis laid on the early spinal fluid changes is fully warranted, for it is safe to say that the meningeal surface is the starting place of practically all neurosyphilis. After the syphilitic meningitis has been established, extension into the brain and cord may follow, and blood vessels, small and large, are peculiarly susceptible. They often become wholly or partly occluded, with resulting anemia or even necrosis of the brain or cord tissue supplied. If it happens to be a middle cerebral artery we may get hemiplegia, with or without aphasia; if a posterior cerebral, hemianopsia; if a basilar artery, pons and bulb symptoms; if spinal vessels, total paraplegia or partial paralysis of spinal type. Cranial and spinal nerve roots are nearly always more or less caught in the meningeal inflammation; hence, the frequency of ocular palsies, pupillary changes, optic neuritis or atrophy, root pains and anesthesias around the trunk or in the limbs, etc.

We shall not go into details of the multitudinous clinical pictures met with in the meningeal and vascular types, but merely point out that practically all so-called meningo-vascular syphilis, or what used to be called "tertiary cerebrospinal syphilis," consists of:

1. Syphilitic meningitis.
2. Syphilitic arteritis.
3. Gummas, usually meningeal.

Often there is a combination of these three, but one or another will predominate in any given case. Usually, all of these may be detected before the parenchyma has become seriously damaged and they respond well to our various antisyphilitic remedies.

"Parenchymatous" Neurosyphilis — the old "parasyphilis." Here belong general paresis, tabes, optic atrophy, and more rarely auditory nerve atrophy and degenerations in the motor system of the type of amyotrophic lateral sclerosis. Neither the term "parenchymatous" nor "parasyphilitic" is a good one. Interstitial changes are also present, especially in the

*Read in abstract before the Illinois State Medical Society, May 19, 1926.

meninges and vessel walls, and these disorders are not a "para" stage, but real syphilis, as has been shown by the finding of spirochetes in the tissues. However, Jahnel[6] and others have shown that these organisms are chiefly found in the gray matter and that they are not especially likely to be found in the areas showing the most intense inflammation. Spielmeyer[7] warns against drawing conclusions from the clinical condition regarding the intensity and localization of tissue changes, and he has called attention to the existence of truly parenchymatous degenerative changes that are independent of the inflammatory and vascular ones. In this way general paresis differs from other forms of neurosyphilis.

Why do some individuals develop paresis and tabes, and why do these affections come on late, usually years after all signs of syphilis have disappeared? Why do they not occur in the early stages when the brain and cord, along with the rest of the body, are flooded with spirochetes? Neglect of early treatment is hardly the chief cause, for such a good observer as Nonne[8] thinks that during the arsphenamin era there has been rather more neurosyphilis, and K. Wilmanns[9] has pointed out that in certain primitive peoples tabes and paresis have recently become prevalent. There has always been much syphilis among them, so the change can only be attributed to the recent introduction of antisyphilitic treatment, probably of an insufficient degree. Two clinical facts of importance stand out; first, that it is extremely common for patients with tabes and paresis to have had no skin lesions at all, or only very trivial ones and, second, it is nevertheless usually impossible to effect superinfection of the skin in such patients. This has led to the hypothesis—for it is nothing more—that the skin is the source of immune bodies, and in their absence spirochetes may multiply indefinitely and invade the viscera without resistance. If this is true, early treatment should be either drastic enough to destroy all spirochetes, or so mild that the secondary roseola is not suppressed, so the desirable antibodies may form. Hauptmann[10] assumes that certain chemical constituents of the spirochetes act as foreign proteins which promote proteolytic ferment action in the host, with the formation of poisonous substances injurious to the endothelium of blood vessels and to nervous tissues. This view is helpful in explaining the independent brain degenerations emphasized by Spielmeyer, and the distribution of spirochetes in the brain to which reference has been made. That in paresis, toxic substances as well as spirochetes play a part is indicated by the recent and, to my mind, very important experimental work reported from Vienna by H. Hoff and E. Pollack[11]. They injected the spinal fluid of paretics under the cerebral dura in rabbits and after four or five weeks fluid changes like those in human paresis were observed, including the paretic Lange curve. Both degenerative and inflammatory changes were observed in the brain. With fluid from cases of tabes and other forms of neurosyphilis different changes were observed.

The main point about these so-called "parasyphilitic" disorders is that they tend to be stubbornly progressive and are so rebellious to even the most intensive treatment that, for the present at least, much more good can be achieved by prophylactic measures; by which I mean, first, measures to limit the spread of syphilis and, second, really adequate treatment in the early stages to minimize the danger of living spirochetes remaining in the central nervous system and its coverings.

Prognosis of Neurosyphilis.—A reasonably correct prognosis in a given case can be made only by a physician capable of visualizing the underlying lesions and of determining whether or not there is a likelihood of destruction of any cell groups or fiber bundles of the central nervous system. New cells and fibres are not formed in the brain, cord, or optic and auditory nerves, so any destruction of these parts is permanent and irreparable. What is dead remains dead, regardless of the fact that the agency causing the death might have been successfully combated at an earlier time. In the case of syphilis of the nervous system this will always remain true, no matter what progress in syphilotherapy the next hundred or thousand years may have in store. The biologic fact of the practical absence of regeneration in the central nervous system will stand. It puts an absolute limit on the possibilities of treatment of paresis and tabes which will always make prophylaxis much more effective than curative treatment.

Let us see what treatment of the very best kind may accomplish—assuming that some day we shall possess a substance capable of killing all spirochetes and of removing all gummatous

tissue, syphilitic granulation tissue, and cellular infiltration, all of which our best present remedies will do at times. If in a case of tabes, spinal-cord or optic nerve fibers have degenerated, those fibers will not regenerate, nor will the destroyed cortical cells and association fibers in a case of paresis. Such symptoms as dementia, ataxia, anesthesia, and impaired vision will be relieved only to such extent as they depend upon lesions which not yet have become degenerative. On the other hand, in tabes, symptoms like shooting pains, explained by root irritation from syphilitic meningitis, or the excitement and convulsions of paresis caused by cell infiltrations and other inflammatory changes, may be relieved. In cases of ordinary cerebrospinal syphilis the same holds true; if part of the brain or cord has been destroyed by softening from occlusion of a syphilitic artery, that part is just as dead as if it had been the seat of an abscess or had been torn out by a shell fragment. Here, however, we deal much more with lesions in the connective tissues, irritating, compressing, or causing undernourishment of the parenchyma, and the latter may be fully restored if treatment is instituted in time.

Treatment of Established Neurosyphilis.—It is a little difficult to warm up to this subject if we contemplate how little neurosyphilis there would be to treat if more energy were spent on prevention. However, the paretics and tabetics remain with us, and as intellectual and endurance tests for the neurologist nothing is more interesting and exacting than the problems concerning their treatment. The subject is enormous and I can treat it only in a very sketchy manner, confining the discussion largely to paresis and tabes. Theoretically, either of these can be cured only at an early stage, but may be arrested at any stage. Practically, cure and arrest are seldom achieved, but remissions for long periods of nearly all symptoms and permanent relief of some symptoms are within our reach with present methods. Arsphenamins intravenously, with mercury in some form or other, accomplish all that can be attained in some patients. In spite of all theoretical objections to intraspinal treatment, whether by the Swift-Ellis technic or by direct injection of neoarsphenamin, my own experience has taught me that some paretic and tabetic patients can be further improved by it after intravenous treatment fails to improve them further. However, its use is not free from mishaps. Even severe meningeal reactions and transverse cord lesions may be produced, and it is time-consuming and more or less painful. Two recent methods deserve special mention; namely, intravenous injections of tryparsamide and inoculations with malaria and relapsing fever.

Tryparsamide was made by Jacobs and Heidelberger in 1915 and its action studied carefully for several years before the first reports on its action in neurosyphilis appeared in 1923[12]. It is pentavalent and crystalloid while arsphenamin is trivalent and colloid. The arsenic content of this substance is about 25 per cent, but its toxicity is remarkably low and its tissue penetrability high, particularly of the nervous system. It is said to be of little value in early syphilis and to have very slight spirocheticidal action. Its value seems to lie in a power to stimulate the normal defensive mechanism of the body and it also improves the general bodily condition and tends to cause an increase in weight. It is very soluble, non-irritating, and does not cause nausea or other unpleasant symptoms on injection. The one drawback is the occasional production of dimness of vision which, however, at least in patients without previous optic nerve disease, is only transient. It shares this tendency to affect the optic nerve with another pentavalent arsenical preparation, atoxyl, with which it is closely related. However, it looks as if our experience with arsphenamin in regard to the optic nerves is to be repeated in part. At first we were warned not to use arsphenamin when there was optic nerve disease, but after a few years we began to use it in the treatment of that very condition. Already Schwab and Cady[13] have reported improvement in vision in cases of optic atrophy treated with tryparsamide, and I am now treating two patients, one of whom at the outset had slight optic neuritis, the other slight atrophy. Both have received several series of tryparsamide treatment and been regularly examined by an ophthalmologist. Both show improvement in visual acuity, visual fields and fundus appearance. It is, therefore, proper to use this drug even in cases with optic nerve affection when the arsphenamins and other remedies have failed, and when the seriousness of the main symptoms,

especially in the case of general paresis, justifies incurring some risk.

Walter I. Lillie[14], ophthalmologist of the Mayo Clinic, has brought out the pertinent point that neither tryparsamide nor other arsenicals have been reported to produce a true toxic retrobulbar neuritis with rapid loss of central vision due to central scotoma. The changes reported have been reduction of visual acuity with peripheral narrowing of the fields—changes which also commonly occur in untreated neurosyphilis, and he inclines to blame an activation of a latent syphilitic process rather than a direct toxic action of the drug. However, for the time being, it is safer to be guided by J. E. Moore's view, that the experience with the closely related atoxyl has shown that an arsenical drug may cause blindness by its toxic action and without producing central scotoma. Granting this exception, it is encouraging to users of tryparsamide that Lillie, after studying 114 cases, concludes that "ocular changes occur as often with arsphenamin treatment as with tryparsamide treatment, and the use of tryparsamide is not contraindicated by pathologic changes in the fundus." The standard technic of tryparsamide treatment is the giving of eight weekly doses of three grams, with one intramuscular injection of one grain of salicylate in the intervals. After such an eight weeks course the patient is given a month's rest, and the laboratory tests are repeated before the next course is given.

As to results, a sufficient number of observations is recorded to allow the conclusion that at least in general paresis more is accomplished than with any intravenous or intraspinal arsphenamin method, and the method is much more simple and pleasant both for patient and physician. Thus, in the second report from the Wisconsin workers[15] in eighty-four cases of paresis of ambulatory type the mental symptoms cleared up in thirty-seven and were improved in thirty-eight others. The blood Wassermann reaction became negative in forty-nine cases, or 54 per cent. In six cases the spinal fluid became normal, and in thirty-six, markedly improved. Of twenty-nine cases of tabes, ten were greatly improved, sixteen unimproved. J. E. Moore, H. M. Robinson and A. Keidel[16] obtained results almost as good, but emphasize that this drug should not be used in early syphilis; and in tertiary and latent syphilis they consider it inferior to the arsphenamins.

H. C. Solomon and H. R. Viets[17] give a report of 100 cases treated in Boston, and while they were favorably inclined, they were not convinced that improvement in general paresis had been more satisfactory than with the older methods of intensive treatment by intraspinal, cisternal and ventricular injections. In a later report[18] they are more enthusiastic, as they have found that in many cases which did not respond at first good results, both serological and clinical, were obtained after seventy-five or more injections had been given. Schwab and Cady[19] noted clinical improvement in 85 per cent and serologic improvement in 90 per cent of all cases treated. However, they alternated tryparsamide with arsphenamin and mercury. John H. Stokes and Lewis F. X. Wilhelm[20] treated 152 cases in the Mayo Clinic and state that tryparsamide is superior, both clinically and serologically for the treatment of the resistant cases of neurosyphilis. In some paretics they met with a definite Herxheimer-like flare-up of the mental symptoms, and their experience with advanced institutional cases was unfavorable. This is corroborated by the work of Read and Paskind[21] in Illinois institutions.

One of the most recent reports comes from Ann Arbor, Michigan, and is made by Udo J. Wile and L. M. Wieder[22]. They state that continued observation has convinced them of the value of tryparsamide in producing clinical betterment in almost 30 per cent of a carefully selected group of cases, but in the main clinical improvement was not paralleled by striking changes in the spinal fluid.

Before mentioning my personal experience I wish to pay tribute to the Rockefeller Institute, whose generosity made possible, first, the discovery of this drug, and then its careful experimental use by selected investigators all over the country, so that when it was released for general use early last year there was already available an array of most helpful data. My own experience of three years deals with patients outside of institutions, princpally paretics. The only peculiarity in my small group has been a relatively greater serologic than clinical improvement.

One case, reported elsewhere in detail by G. B. Hassin and myself, Arch. Nemol. & Psych. July, 1926 (16:37) is instructive but dis-

couraging. After a period of mental and physical improvement, and while the spinal fluid was normal, the patient declined rapidly and succumbed promptly to an attack of broncho-pneumonia. There was intense inflammation in the cerebral cortex, with extensive proliferation of capillaries, degeneration and destruction of ganglion cells and nerve fibers, and abundant spirochetes in the frontal and temporal lobes. Another patient, also a paretic, showed no mental improvement but gradually his serology became negative. However, when this had been accomplished he grew acutely disturbed mentally, and his previous mildly grandiose delusions gave place to depressive ones which led to suicidal attempts, and he had to be committed to a state hospital. There he further declined both mentally and physically, but the serology remained negative. It is fair to state that tryparsamide treatment is superior to all kinds of intravenous and intraspinal arsphenamin treatment, that it prolongs the life of many patients and produces more or less prolonged remissions, but probably only very rarely, complete arrest of the disease.

Malarial Inoculation.—It is an old observation that patients with general paresis, epilepsy, dementia praecox, and other psychoses may have a more or less prolonged remission from their mental disorder after an acute febrile disease. This has led to the use of many fever-producing agents in treatment and to the discussion as to whether it is the fever *per se*, the leukocytosis or some other factor that brings about the remission. Turpentine abscesses, nucleins and tuberculin were used with varying success for many years, but during the past seven years inoculation with malaria and relapsing fever has entirely over-shadowed the other agents mentioned. Inoculation with tertian malaria was reported upon by Wagner von Jauregg in 1918.* Since then this work has been continued in Vienna, was soon taken up in Hamburg, and during the last two or three years reports have come from all over the world. The usual technic is to inject, subcutaneously, 0.5 to 4. c. c. of malarial blood. If the blood is to be transported or preserved for some time, it is usually defibrinated with a 50 per cent dextrose solution. It is important to have a pure strain of tertian malaria, for if estivo-autumnal organisms also are present death may result. It seems to be immaterial whether the blood is taken during a paroxysm of fever or in the interval. There is no immediate reaction and the period of incubation varies from ten to twenty-five days after the subcutaneous injection, and five to eight days after intravenous injection. The patient is then allowed to have from eight to twelve paroxysms before quinin is given. From all reports now available it is evident that a very large number of patients have a complete remission and are able to return to their former occupations. Thus, Gerstmann reported from Vienna that in September, 1921, three out of nine patients treated in 1917, and nine of twenty-five treated between September, 1919, and May, 1920, were still perfectly well and at work. Of fifty-one patients treated in Hamburg between June, 1919, and October, 1920, when all were re-examined in March, 1922, fourteen had complete remission and sixteen others did their former work but showed slight mental defect. After subsequent relapse, remissions have again occurred after a second inoculation. In 1923 Gerstmann reported detailed observations in 294 cases. There had been complete remission in 112, incomplete in ninety others, and ninety-two patients has been uninfluenced. Three patients have died of intercurrent disease during remissions and histologic examination revealed distinct regression of the cortical changes. Favorable results have since been reported from England, Denmark, Sweden, South America, and in 1924 the first report of such treatment in America was made from St. Elizabeth's Hospital in Washington, D. C., by Nolan D. C. Lewis[23] and others. Of sixty-eight patients inoculated, nine failed to develop malaria. Complete remission, mental, physical and serological, was observed in 31 per cent of the cases. The brains of four extremely deteriorated patients who died after the treatment, showed apparent reduction in the inflammatory changes. In two of the brains no spirochetes were found, and in the others only very few. At the New York Psychiatric Institute decided improvement was observed in eighteen of thirty-nine patients treated, according to H. A. Bunker, Jr., and G. H. Kirby[24]. In a series of 1,000 untreated cases of paresis in New York institutions the percentage of spontaneous remissions was 3.5. Tophoff[25] analyzed a group of 289 paretics in an asylum near Bremen and found that there had been 4.8 per cent com-

*Early in the summer of 1926, however, this man without further treatment became normal mentally and returned home.

plete remissions and 14.9 per cent incomplete. In order to evaluate the treatment properly it is, of course, important to be aware of this tendency to spontaneous remissions. Almost as interesting as the results themselves is the speculation as to the cause. Some authors attribute it to the elevation of temperature and quote experiments showing that spirochetes in the chancres of rabbits may be killed when the temperature of the animals is raised to 42° or 43° C.

However, the clinical results bear no distinct relationship to the degree of fever induced and higher temperatures may be produced by injection of milk or typhoid vaccine and yet the results are not as good. Leukocytosis is usually absent in malaria. Malaria *per se* does not prevent the development of paresis, as a history of malaria during the early stages of syphilis frequently has been obtained. Kirschbaum believes that the benefit obtained is analogous to that produced by parenteral introduction of proteins in many skin affections. Weichardt designated the process induced, "protoplasm activation" which is something similar to the claim made for the action of tryparsamide in strengthening the protective forces of the human body. F. E. Müller[26] has further studied this protein action and has demonstrated the existence of hyperemia, transudation and increase in leukocytes in the diseased tissues, without general leukocytosis. These phenomena, as well as the diminution of leukocytes in the peripheral blood at the onset of a chill, are attributed to parasympathetic action.

Inoculation with relapsing fever was already practiced in cases of ordinary dementias by Rosenblum of Odessa back in 1874. In 1919, Plaut and Steiner began to employ relapsing fever inoculation in paretic dementia. They prefer relapsing fever to malaria because they assume a close biologic relationship between the spirochete of relapsing fever and that of syphilis. Higher fever is produced and if the paroxysms do not cease of themselves they may be stopped by neo-arsphenamin.

Effect of Inoculation Treatment.—In spite of the large number of reports of patients having returned to their former occupation and remaining apparently well up to the present, there is already abundant pathological proof that only remission, not cure, is attained.

In the laboratory of Wagner von Jauregg's Clinic in Vienna, E. Sträussler and G. Koskinas[27] had the opportunity to examine the brains of not less than thirty-five paretics who had been inoculated with malaria and thirty-one of these patients had experienced more than five paroxysms. The authors set themselves the task of determining whether, in cases with marked clinical remission, there also would be found a corresponding change in the pathologic process. Long ago Alzheimer, in his important work on general paresis, had related the case of a patient with a complete remission who died of heart disease, but in whose brain a very pronounced and typical paretic disease was found. The present authors, however, found regression and even arrest of the pathologic process proportionate to the clinical remission. A striking case was that of a man with the simple dementing form of paresis who had received malarial treatment in August, 1921, followed by a very decided but not complete remission. He was able to work until February, 1924, when he suddenly developed ileus and died after laparotomy. There was some fibrous thickening of the meninges, and cell infiltrations in the pia and about the cortical vessels were very slight and consisted of lymphocytes, while plasma cells were exceedingly scarce. The changes in the ganglion cells, nerve fibers and glia were so slight that without knowledge of the clinical history a diagnosis of general paresis could not have been made. Not less than half of the cases having more than five malarial paroxysms showed regression in the pathological process. The authors attempt to answer the question as to how the improvement after malarial inoculation is brought about. In four cases in which death occurred soon after the paroxysms of malaria, there was a decided intensification of the infiltrative process, and in two cases there was formation of structures resembling miliary gummata, indicating a favorable effect on the protective forces of the organism. This idea of an initial increase in inflammatory reaction, with a change to a more benign inflammatory type corresponds with the clinical observations of transient states of excitement, confusion, and hallucinosis, temporary increase in cell count in the spinal fluid and a change in the colloidal reaction from a paretic to a simple syphilitic type.

R. Markuszewicz[28] reports the case of a man aged 57 suffering from general paresis, who,

after inoculation with malaria displayed two peculiar reactions; namely, a change in the mental picture from simple deterioration to a hallucinatory-paranoid state, and the development of gummata in the skin. The latter appeared two months after the inoculation and was preceded by furunculosis. The occurrence of tertiary manifestations like these gummata in a case of general paresis is exceedingly rare, but in this case the diagnosis of gumma cannot be questioned, as the lesions were excised and examined microscopically. The change in the mental picture recorded here is not uncommon and has been extensively discussed by Gerstmann and Pötzl, who consider it a favorable sign and an indication that the disease in the brain is changing into a more benign form. The mental change in the present case was attended with a change in the spinal fluid reactions from a paretic to a simple syphilitic type. On the basis of the reactions in this case the author indulges in some interesting speculations. He assumes that through the furunculosis allergy of the skin was induced and sensitization of the skin was at first non-specific, but on account of the increased immune body formation, mobilized by the malarial injection, the non-specific reaction became changed into a specific one, and the neurotropic syphilitic virus in this patient was lowered in virulence to become dermotropic once more, and to produce the cutaneous gummata. The author here sees an important therapeutic hint. Perhaps the way to treat syphilis successfully and prevent late neurosyphilis is to increase the allergy of the skin by inducing suppuration or by inoculating the skin with a tricophyton, and then inoculate malaria and give specific remedies. The author quotes Kyrle[29] as having made favorable reports on the use of malaria in early syphilis, and F. Bering[30] as having stated that the earlier the malaria treatment was instituted in syphilis of the central nervous system, the better the results. However, the present author emphasizes the necessity of postponing the use of the arsphenamins until the skin immunity has reached its height.

The Treatment of Tabes.—As set forth in the remarks on prognosis, this has its limitations on account of the non-existence of regeneration. Sometimes the process is arrested, or at least retarded, by intravenous and intraspinal arsphenamin treatment and by tryparsamide, as well as by mercury and perhaps bismuth, the latter acting very much like mercury. Certain special local irritative symptoms may require special treatment. In the case of gastric crises I can corroborate H. J. McBride and E. A. Carmichael[31] as to the benefit of intravenous injections of 30 c. c. of 30 per cent sodium chlorid solution. The surgical treatment by root resection is discussed in an interesting manner in a recent paper by M. Critchley and J. M. Wolfsohn[32]. While section of the posterior roots has often failed, relief has sometimes been obtained when the anterior roots also were severed. Section of the anterolateral tracts, chordotomy, has also been successful, while in some cases the vagus nerves seem to be at fault. It still seems that these crises may be produced by irritation of different nerve paths, and it is difficult to fix the proper mode of attack in any given case.

Prophylaxis.—From what has been said it is clear that there are only two certain ways of escaping invalidism and death from neurosyphilis; namely, not to contract syphilis, or to be treated early, intensively, and with the control of spinal fluid examination, even in the absence of secondaries and of nervous symptoms. Syphilis is a disease which probably could be eradicated from the earth within the period of three or four generations if all people really wished it. We have only to control and restrict the freedom of action of human beings known to be capable of transmitting the disease. We are not concerned with air or water pollution, nor with milk, oysters, rats, ground squirrels, insects, cattle or hogs. If we should segregate the active syphilitics, like "Typhoid Marys" or lepers, there would certainly be very little syphilis contracted by people possessing sense enough to protect themselves against infection, and the others would deserve segregation for their own sake as well as for the benefit of the race.* We of the medical profession should at least do our utmost to teach the public to avoid contracting syphilis, and to establish, or aid in establishing, means for the adequate treatment of all infected persons, regardless of their financial and social positions. We must either, among ourselves, organize the necessary cheap clinics all over the country, or we must say that we cannot do it alone and urge municipalities and states to do it, or acquiesce

in and encourage the establishment of such clinics by non-medical philanthropists.

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5. Zeitschr. f. d. ges. Neur. u. Psych, 1925, Vol. 95.
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9. Klin. Wochenschr., June 4, 1925.
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16. Jour. A. M. A., Feb. 16, 1924.
17. Jour. A. M. A., Sept. 20, 1924
18. Ibid., Aug. 1, 1925.
19. Arch. Neurol. and Psych., Jan., 1925.
20. Arch. Derm. and Syph., May, 1925.
21. Arch. Neurol. and Psych., June, 1924.
22. Jour. A. M. A., June 6, 1925.

*According to M. Ikhtemann (Ann. mal. venér., 1925, 20: 561) Rosenblum had inoculated paretic patients with malaria, typhoid and relapsing fever between the years 1864 and 1874 and made a report in the Odessa Hospital Bulletin, Feb. 13, 1876.

23. Am. Jour. Psychiatry, Oct., 1924.
24. Jour. A. M. A., Feb. 21, 1925.
25. Zeitschr. d. l. ges. Neurol. u. Psych., Vol. 9, 1924.
26. Muench. Med. Woch., 1922, No. 43.
27. Zeitschr. f. d. ges. Neurol. u. Psych., Vol. 97, 1925.
28. Zeitschr. f. d. ges. Neurol. u. Psych., 1925, Vol. 99.
29. Dermat. Woch., 1924.
30. Muench. Med. Woch., May 1, 1925.
31. Lancet, Nov. 8, 1924.
32. Jour. Neurol. and Psychopath., Feb., 1925.

*The idea of compulsory treatment of syphilis is not new. In 1773 compulsory and free treatment was instituted in Denmark by a royal decree, which stated that it has been reported to His Majesty that venereal diseases were spreading among the peasantry, and that on account of ignorance, shyness, poverty, or mistreatment by quacks, they failed to receive proper care. Patients who had failed to present themselves for treatment were to be imprisoned after they had been cured. In 1859 a law was passed in Denmark providing punishment for those who transmitted venereal disease.

30 North Michigan Avenue.

MINUTES OF SECRETARIES CONFERENCE

Champaign-Urbana, May 18, 1926

This section was called to order at 9:30 a. m. by Dr. Harold Swanberg, president, of Quincy.

Dr. Harold M. Camp, Monmouth, read a paper on "The 100 Per Cent Efficient County Medical Society Secretary." Discussed by Dr. J. S. Templeton, Pinckneyville; Dr. W. F. Grinstead, Cairo; Dr. J. W. Hamilton, Mt. Vernon; Dr. E. R. Miner, Macomb; Dr. Harold Swanberg, Quincy; Dr. W. J. Benner, Anna; Dr. Wm. D. Chapman, Silvis. Discussion closed by Dr. Camp.

Dr. J. R. Neal, Springfield, delivered an address on "Political Attitude of Physicians." Discussed by Dr. E. W. Fiegenbaum, Edwardsville; Dr. C. J. Whalen, Chicago.

Dr. H. V. McClanahan, Galesburg, read a paper on "Observations from the Standpoint of a new Secretary." Discussed by Dr. T. D. Doan, Carlinville. Discussion closed by Dr. H. V. McClanahan.

Remarks by Dr. Mather Pfeiffenberger, Alton, President-Elect Illinois State Medical Society.

Remarks by Dr. J. C. Krafft, President Illinois State Medical Society, Chicago. Discussion by Dr. Edward Ochsner, Chicago.

Remarks by Dr. J. N. Jackson, Kansas City, President-Elect of the American Medical Association.

Election of officers: Dr. E. R. Miner, president, Macomb; Dr. J. W. Hamilton, vice-president, Mt. Vernon; Dr. W. J. Benner, secretary, Anna.

Adjourned at 12:00 o'clock, noon.

THE 100 PER CENT EFFICIENT COUNTY MEDICAL SOCIETY SECRETARY*

HAROLD M. CAMP, M. D.
Secretary, Illinois State Medical Society
MONMOUTH

County medical society secretaries might well be classified similar to risks for life insurance according to the plan known by insurance men as the "Numerical Rating of Risks." According to this plan the ideal risk is given a rating of 100 per cent. All features in connection with the risk which would lower his rating are placed in one column and those decidedly to his advantage are placed in another. By consulting these lists, he is given a definite percentage rating.

We will first consider the ideal county secretary and leave it to your own judgment to give yourself the proper rating. The position of county medical society secretary in many ways is not an enviable one, yet on the other hand, the future of the society depends largely on the caliber of the man or woman placed in that office.

As we all know, the management of a county society falls into the hands of one member, its secretary, and his is a grave responsibility. The success or failure of the Society is principally dependent on the services the secretary renders, so his, indeed, is a grave responsibility. The secretary must be energetic, visionary, good natured, constructive and broad minded. He must realize and constantly bring to the attention of the society the well known fact that the real basic unit of medical organization is the county medical society. He must be a salesman—sell-

*Read before the Secretaries' Conference, Illinois State Medical Society, Champaign, May 18, 1926.

ing the society to prospective as well as potential members.

His duties are many, he always received the kicks, but unfortunately, rarely the boosts to which he is entitled when the management of the Society affairs at his hands is ideal.

He should not only endeavor to retain his membership from year to year, but should make every effort to increase it until every eligible and reputable practitioner in his county is a member.

He should realize that his responsibilities are not only to the local society, but also to the State Society and the parent organization, the American Medical Association.

He should also remember that a chain is only as strong as its weakest link and should try to make his link in the chain of medical organization one of the strongest in the entire chain.

The ideal secretary is continually trying to improve the character and attractiveness of the meetings. Even in small counties, the meetings should be held frequently. Many counties have quarterly, or perhaps only semi-annual meetings at which time the program is made up of men of prominence in the profession and at which time efforts are made to get physicians from all surrounding counties to attend. In addition to this type of meeting, it is advisable, in my opinion, to have monthly meetings and have local men on the program. With such an arrangement, every member present will get up to discuss papers on timely subjects, when perhaps principally through modesty, they will hesitate to discuss the paper of the teachers of prominence.

In many of our smaller societies, the attendance at the meetings is several times the number of men in the county, the attendance being principally from surrounding counties invited to the meeting. This, of course, requires more effort on the part of the secretary but unquestionably pays. One of the most frequent troubles in the office of state society secretary comes through the local secretary not enforcing the by-laws of his society, relative to the payment of dues. The by-laws of our society state that all members who do not pay dues for the current year are dropped from the membership list automatically on December 31. During this year for which they are delinquent, they have received all of the benefits of the society, have received the Journal, the Medico-Legal and Legislative protection and it is quite fair to ask them to pay for the delinquent year before they are reinstated. We frequently receive the information in reports from county secretaries, that Dr. Blank dropped out last year but has decided to reinstate and we enclose dues for the present year. This is prohibited in our by-laws and we repeatedly are required to write the local secretary that he must remit for the delinquent year before the reinstatement is permitted.

By keeping this in mind constantly much time and trouble can be averted from year to year.

The removal of names from the membership list in the state society requires in every instance the writing of no less than five or six letters, then the subsequent reinstatement of a similar number. Supposing that we consider as a minimum, one hundred fifty members lapse and are reinstated annually in our society, we can see the vast amount of correspondence necessary for this one factor.

The efficient county society secretary will report all new members promptly, sending in his remittance with the report, so that there will be no delay in giving the new member the benefits of the society. The annual dues of members should be remitted at least once a month. A few of our societies send in an annual report at the end of the year which causes much work and confusion within a short period, which should be distributed throughout the year. With this system which we might call the "Delayed Report System," the society is compelled to carry the names of many who have dropped from the membership list, some who have been dead several months and others who have removed from the state. These, of course, cost the state society a considerable amount of money each year.

The ideal secretary should be at all times informed as to the various activities of his state society and be able to answer questions from his membership relative to the same. He should know that besides the JOURNAL, the society gives the best possible medico-legal protection, the best legislative service, and our highly efficient Lay-Education Organization which has done much good work during the past two years. In addition to these, he should remember that it is possible to arrange for post-graduate meetings by applying to the lay education committee and those of you who have already had this newer

service realize the value of it to the county medical societies.

You are frequently asked to give advice or make suggestions to the Lay Education Committee and to cooperate with them in many of their undertakings. In those counties where there has been the proper spirit of cooperation, you will see all health activities undertaken by all lay organizations under the guidance or supervisions of the county medical society. Our lay friends are anxious to do their part, if we will aid them and direct them. Without such assistance from medical men, they would be unable to work to the best advantage of all concerned.

The movement for periodic health examinations and the examination of the pre-school children are both going to be major activities and require a high and efficient degree of team work to make them successful. The county society and its secretary have an important part to play in this movement and the results will be directly dependent on your efforts and assistance. These movements should be talked over in the society meetings. If you need additional information from that received through the JOURNAL and other sources, write the Lay-Education Committee and you will get all the assistance available. In a consideration of the duties and responsibilities of the ideal and highly efficient county medical society secretary, we should not overlook our responsibility to the American Medical Association. The county society is really the American Medical Association and we should all be proud of our affiliation. We should know what that great organization is doing to protect us in our work. We should know which of the newer pharmaceutical products have been accepted by the Council on Pharmacy and not experiment with all preparations placed before us by enthused salesmen. We should know what they are doing to protect us in their Bureau of Investigation, as shown in many of their publications, many of which are on exhibition at this meeting. We should be acquainted with the many other departments and bureaus, so that we shall not only be proud of our fellowship but persuade other members of our society to affiliate.

It is my opinion that a successful county society secretary should retain his position so long as he renders the proper services to his society. The practice of changing secretaries as often as the other officers of the society, is not a good one.

We are told that everything in the world that is worth having takes considerable effort to acquire, and nowhere is it more true than in the case of the county secretary. He must make personal sacrifices to be truly successful in his office.

At the last session of the Illinois legislature there were forty-nine bills introduced which would have, in some way, been detrimental to the medical profession had they become laws. Fortunately not one of them passed both houses and received the Governor's signature. It is no longer necessary or advisable to send a big lobby to Springfield while the legislature is in session, to protest against some impending legislation. The chairman of our legislative committee will tell you more of this phase of our work, in his talk before the conference. The 100 per cent efficient county medical society secretary should have his eyes and ears open all the time. He must work for the interests of his society every day, including holidays. He should realize his many duties and responsibilities. He should arrange meetings as frequently as possible, so that the interest of his members will not wane. The motto, "He profits most who serves best," is well adapted to his work and even though he may not get the credit that is due him, he will have the satisfaction of knowing that he has been a successful executive and that those who follow him in a like capacity will have a precedent established that will stimulate them to work for the interests of the society in the future.

DISCUSSION

Dr. J. S. Templeton, Pinckneyville: If anybody needs sand in his craw the county secretary needs it, and our county I suppose is the same as other counties; you have to go after some of the fellows as much as four or five times before they pay their dues. They go along and after a while their JOURNAL stops and they call you up, and when it is explained to them they say they paid their dues last year. They never have a receipt but they are still confident they have paid. The only way to treat a fellow like that is to go after him every month. Send him a statement or go after him personally and show him he is not paying his dues. Usually that class of fellows will pay up and your membership will stay what it was before; then if you get a new one or two you are ahead.

At the beginning of the year if you do not watch this thing they will put you off and after a while they claim they paid their dues. As Dr. Camp said, we all know what it would be if you had one hundred fifty

who did not pay promptly. The Doctor knows I am guilty along those lines, as my men have lapsed and I wanted to get them in again and when they claimed they have paid we have either had to have the records looked up as high as three or four times or check up to get my list straightened out.

Dr. Hamilton, who was to follow Dr. Camp, is one of the efficient secretaries of our state. By the first of April last year he had every man who belonged to his county society paid up. He went after them personally and said he wanted the money and he got it. It is the only way you will ever get it at the proper time, and save our state officers and yourself much trouble.

If we could have the whole state society here to listen to Dr. Camp, Dr. Chapman and Dr. Gilmore telling their experiences we would have fewer men trouble the county secretaries.

Dr. W. F. Grinstead, Cairo: So basic a paper as that, coming from such a source as it does, going right down to the smallest nut we have to crack, ought not to be passed with just the discussion of the financial features of it, as the secretary has so entertainingly done.

I have had all the offices in county and district medical society except treasurer (they never would let me have that), and as I have said to this society before, perhaps, I am an old medical society rounder —I never miss anything—and I am always a better doctor when I go home than when I left, and I have heard something and seen something of all these things that pertain to the secretary of the county medical society. I belong to three district medical societies, Southern Illinois, Southwestern Kentucky and Southeastern Missouri. In Southeastern Missouri at their last meeting in October they elected a new secretary. About a month after that election I got a letter from this new secretary in which he said, "Dear Doctor, won't you please point the way for me in assuming these duties? I have not had much experience at it, and I want to get a good program for the next meeting. I want to get a program that will interest the members and get out a large attendance and insure a good time." One of the things I said to him (and about the only thing I will have time to discuss here now) was "Don't take *no* for an answer. When you write one of your members that you know can get busy and write a little paper, and he does not answer you, write him again and again. Call him up by long distance telephone. Tell him he does not have to write a great long paper, that his paper should require only ten or fifteen minutes to read it. Tell him the discussion is often better than the paper. If you don't get action out of him, try to find out, if you have not already learned, what line of his work he is most interested in, select a subject for him, write it to him, and tell him that the district Medical Society wants him to prepare a little paper on this particular subject because he has been interested in that subject, and you can get the society something that will interest everybody."

Assign a subject for them. Sometimes a fellow can not decide for himself what he wants to write about. If someone picks a subject that he knows, from his acquaintance with him, he is interested in, you will often get a paper in that way.

Dr. J. W. Hamilton, Mt. Vernon: This is my first opportunity to attend a secretaries' meeting, and I do not know just what is expected of me to say. I am glad to tell you people that I represent one of the counties in the state of Illinois that is one hundred per cent. membership. Now there are not very many, as I understand, that have a full quota of members belonging to the county society. We have, and have had for two years now, a hundred per cent. membership, which is twenty-eight or twenty-nine physicians in our county, and our average attendance is more than thirty-five at each meeting. That means of course we had quite a number of outsiders come in.

Now, just what it takes to keep a society up is hard work and engineering. Our society got run down a little bit a few years ago and Dr. Hall and I decided to build the thing up if it was possible to do it. We have a good representative body of physicians there and they are active fellows, but they are like lots of other men—they get into the secretary's place and they are busy and they neglect the things that are fundamental to keep the society going. Dr. Hall took the president's job and forced the secretary's place over on to me. We went about getting our membership up, and went to visit every doctor and persuaded him to join the society. We got men out from a distance that were able men, mostly with lantern slide facilities, and each month they have given us wonderful lectures that were worth something to all of the doctors. We mixed it up; we did not get all surgical or all medical or all one kind but we mixed it up so each doctor would share in each of the meetings. We had such men as Bransford Lewis and men of his caliber there. They were glad to come out with us and spend the evening and certainly enjoyed it as well as we. Then we went to work after that and began sending out to our adjoining counties, asking the other doctors to come in from other counties, and I think we have been a stimulus to some of our adjoining counties.

We took McLeansboro, that is Hamilton County, in through the Board of the Council. They permitted them to join with us. They could not keep a society up, and they are in close proximity to us and it has been quite a help to them.

Now at this next meeting we have a symposium on pneumonia. Dr. Neilson of St. Louis, a man whom many of you know, and a very able man, and some of his co-workers, are coming to give us what is said to be one of the best symposiums on pneumonia ever held by the St. Louis Medical Society. We are sending out about two hundred invitations to our adjoining counties. We not only ask them to come to our meetings but we visit those societies. I was in Benton the other night and enjoyed myself. I do not believe any body of men can keep a society going that stays within itself. They have to mix with other doctors in order to enthuse them to want to come back and return the visit; and when you give them something

to entertain, to justify them for the loss of time and their trip, they are going to appreciate it. The hard roads help us a great deal, and we have had eleven meetings. I see from some of the reports from some parts of the state they have only had five meetings and sometimes only four at the meeting. At our eleven meetings there have been not less than thirty-five at any one meeting, and part of those were rainy nights. We would have had the twelfth meeting had not the Southern Illinois Medical had their meeting on the night our meeting should have been. This is the only way I know to keep life in the county society, is to put it in there, go to other societies, and invite other men to come in and get good material to entertain, and I believe the secretary can keep the society up to par or better.

Dr. Elizabeth R. Miner, Macomb: It is not only the collection of dues that is one of the hardships of the county secretaries, but my worst trouble has been the writing of letters to the different doctors and getting no answer—just simply ignored altogether. I see some of you smiling. I think a good many of you have had that same trouble.

How to keep up interest in your society. I think we have had wonderful meetings in our society, they have been very interesting and the members all take part, but at the last meeting one of the members said to me, "Well, you are only having entertainment, I want something else. You are having outside speakers come in, but why not have something local?" So we are going to have our own members speak and try that awhile.

Then how do you get outside doctors to attend? We got up a wonderful meeting and thought we would have all of the doctors from the surrounding territory at our meeting and it rained that day and we did not have anybody come in from the outside at all. You know how disappointing that is, at least to the secretary. I do not know how to get the outside doctors to attend. I would like to hear.

Dr. Harold Swanberg, Quincy: The one thing that I wish to discuss in regard to Dr. Camp's paper is the method to be used to secure participation in society programs by the members themselves. For some time we have been using a method in our own society which is applicable to any of the smaller county societies. This method consists in having the members present interesting case reports, assignments being made alphabetically. A case report is something anyone can give. A great many men are afraid to get on their own feet to present a formal paper but will be glad to discuss one of their own interesting cases. We have been having the members of the Adams County Medical Society present case reports in alphabetic rotation for the past two years. I am sure that this has resulted in many members addressing the society who otherwise would have never done so. These case reports only consume fifteen or twenty minutes and do much to make the individual member take more interest in the programs of the society.

Dr. W. J. Benner, Anna: I happen to be a secretary of one of the smaller societies and something was said about the collection of dues being rather difficult.

I don't know that I have experienced a great deal of difficulty in getting in the dues, not even this year when they have been raised considerably, but a number of men make this statement: "State dues are getting pretty high, when we have levied sufficient to carry on our own activities it makes it amount to something and if they get any higher I do not know as I am going to maintain my membership."

We are told the chief reason for that is the protection, which costs them considerable, and they themselves have their own protection or insurance and do not favor the protection of the Medical Society. I was wondering how many of the secretaries here have that same experience, if the idea was really popular and if the expense was going to increase, would it not be better to discontinue that if we are going to lose membership, and let the individual carry his own insurance.

I would like to hear from Dr. Camp in that matter.

Dr. Wm. D. Chapman, Silvis: There is one thing which has not been especially emphasized this morning, which I would like to mention, and it is the relationship of the county society secretary to the state society as well as to his own county society.

You have here this morning at a conference of county society secretaries the general officers of the society, the President and Secretary and the President-elect and as many of the Councilors as have been able to get to town so early. I wish to cite this as an indication that these officers of the society regard the county society secretaries as members of the family. I should like it if the county secretaries would get the idea that they as a group do constitute a sort of enlarged council, a group for the carrying out over the state of the policies of the council. The Council and House of Delegates of the state society must have policies and somebody must carry them out. If the county society secretaries could all convince themselves that they were members of this official group in carrying out policies of the state society I believe that in many instances their own personal estimation of the job which they hold would change.

The county society secretaries as a whole should feel a very much greater pride in service than some of them have shown in the past. Pride in service, respect for the job which you hold, is a thing which will make for greater efficiency in the conduct of county society work. The county societies are no longer isolated and the fact that they are units (and operating units) of the state society is one which should not be belittled or in any case overlooked. That one item, I think, is a thing which should be brought home to some of the secretaries of the smaller societies. They are not being overlooked; they are being begged to come in and consider themselves a sort of general staff, if we might word it that way, in the carrying out of the policies of the council, and they are a cog without which the society can not function at anything like one hundred per cent. efficiency.

Dr. H. M. Camp, Monmouth: I intended to mention that our Society has three very highly efficient

lady secretaries. I would suggest that the societies occasionally select a lady secretary.

In regard to the matter of dues, I would like to answer the doctor's question. Of all the larger state societies, I believe that our Society collects the smallest annual dues. A great many societies have annual dues of ten dollars, some have fifteen, one twenty, and one twenty-five.

What are we getting for the amount we pay? We pay eight dollars per year. We get the JOURNAL. We have many subscribers, both in this country, and in practically all foreign countries. The local subscriptions are three dollars, and the foreign four dollars per year, and they are all glad to pay these amounts.

We have our legislative protection, and one of the things I mentioned in my talk was the fact that at the last session forty-nine bills were introduced in our legislature, any one of which, had they been passed, would have in some way affected the practice of medicine. Every one of these measures was killed; not one became a law. That is what I call service. Dr. Neal may give additional information on this subject in his talk this morning.

Then we have the medico-legal protection; adequate medico-legal protection in an insurance company would cost twenty-one dollars per year. We are collecting one dollar fifty cents per year from each member for the service. I do not believe that any member can afford to be without it, and if you can get this service for a dollar and a half, surely this ought not to be considered an extravagant expenditure.

Some of our non-medical organizations, as the osteopaths, pay fifty dollars per annum for each member, and all they get is partial protection, which they call legislative service. Their money goes to lawyers to try to get bills through which would favor them in some way; perhaps they want to practice obstetrics, give vaccines, serums, or something of that sort, and want a measure that will permit them to do these things—that is what they expect for their fifty dollars a year.

We have been told that the Chiropractors pay one hundred twenty dollars a year, or ten dollars a month, for a similar purpose. They thought they were going to buy a practice act in Illinois a few years ago, but failed to do so.

I do not believe any of our members should think eight dollars per year an exorbitant fee for a year's protection, with the other benefits gained through membership. During the past three years we have had two malpractice suits in Illinois which cost the Society something like eight or ten thousand dollars for defense. I am sure that the members defended in these cases would like to be here this morning to discuss the subject of dues.

Dr. Chapman and Dr. Neal can both give more information on this subject than I, and I am sure that they can tell why it was necessary to increase our annual dues from five to eight dollars per member last year.

POLITICAL ATTITUDE OF PHYSICIANS*

J. R. NEAL, M. D.,
SPRINGFIELD

If we accept the word political, as contained in the title, to mean "pertaining to public policy" I shall attempt to give you my thought regarding the political attitude of physicians, but if I had to sum it up in two words—it would be "extreme tolerance." Even at the risk of being criticized I submit that all county secretaries and the officers of our state society are politicians—not the kind we see headlined on the front pages, for you are the thinking body that has the management, the polity if you please, of this society ever at heart and ever in mind, and it is that angle that I am attempting to describe, mindful, of course, of the excellent professional ability and the fine ideals for which the medical profession stands, but after all I am firm in my belief that our political attitude at times, at least, is one of insufferable altruism.

There are very few, all too few, of our able men, of which this society has hundreds, who really take an active interested part in its management. There are too few of us who are willing to take a sufficient amount of our time to give this very important matter its proper consideration. There are a few, however, who give more than their full share of devotion. I can only point to such men as Dr. Krafft, your president; Dr. Whalen, your editor, Dr. Chapman, chairman of your council, Dr. Camp, your secretary, and your councilors, together with a number of others who are not only making a meeting of this sort possible, but throughout the entire year are carrying on. Dr. Whalen is sitting in the room—am glad he is here. I told him I was going to say some mean things about him, and he said: "You cannot think of anything that has not been said"—so I have his full permission to say anything I please.

Now, let me read you a quotation which is as follows: "The American public is easy game for the promoter who has something new to offer in any field of enterprise in the healing arts. It is our American fashion to look for remedy to a new Federal bureau or a new this or that, but we need not more laws or more bureaus or more amendments in the solution of our problems." And let me read you another quotation from a

*Given before the Secretaries' Conference, Illinois State Medical Society, Champaign, May 18, 1926.

speech which says, "The state in its attack upon bureaucracy should not be induced by coercion or by favor to surrender the management of its own affairs. No method of procedure has ever been devised by which liberty could be divorced from local self government; no plan has ever been adopted which did not result in tyranny, reaction and decline."

If I should submit these quotations to a group of members of the Illinois Medical Society for a vote as to who said them, I would be willing to wager that the majority would say, "That was Dr. Whalen." I would be willing to say some would charge him with being radical; some would say he was running wild and that there is no shadow in the foreground that would necessitate such utterances, and I have no doubt you have in your own minds, or you have talked with people, who would maintain that the language of those two passages that I have just read, is entirely too severe. Now let me tell you that the first quotation I read was taken from the daily press a few days ago and was spoken by Professor Robert N. Corwin, Chairman of the Board of Admissions of Yale University, and the other quotation which exemplifies so closely the opinions of Dr. Whalen which we have read in our own State Journal the last few years, is taken from the speech of Calvin Coolidge at Williamsburg, Pennsylvania, three or four days ago. So it comes to pass that the President of the United States and one of the administrative officers of Yale University in a subconscious manner, at least, endorse the editorial policy of Dr. Charles J. Whalen.

The speech of the President of the United States is no more pointed in its meaning than a great many of the editorials in our JOURNAL along this same line of reasoning. It was these editorials that the proponents of the Sheppard Towner Maternity Act attacked in a printed leaflet, entitled: "Another word on the Maternity Bill," and it is very plain that in their answers they evaded the very issue, *i. e.*, States Rights, which the President of the United States has laid down, in what is termed as the most outspoken speech of his entire political career, and stood for the very thing that the JOURNAL has always maintained is necessary for the state of Illinois. I am saying that in no defense of Dr. Whalen, but I believe it thoroughly vindicates his policy as set forth in the editorial attitude of the JOURNAL. I am not endorsing everything Dr. Whalen says. He has frequently told me there are a lot of things I do that he does not like so I am simply getting back at him.

So I maintain physicians are too tolerant in matters of this sort.

When Senator Reed, in 1921, opened his speech in the Senate on the Maternity Bill, which is undoubtedly the finest tribute to motherhood that it has been my privilege to see or hear, in the preamble to his speech he, in addressing the President of the Senate said: "Mr. President, give a bill an attractive name, an appealing title, back it by a well-organized propaganda abundantly financed, and an active lobby of persuasive ladies who solicit and pledge votes, and that bill, whether it is good or bad, wise or foolish, is almost sure to pass." I would be glad to have you check me as to whether those are Senator Reed's words, for I am quoting from memory, but it always appealed to me as a political axiom.

Now, in the Illinois legislature last year there was a bill just of that type; it was a bill aimed to curtail the activities and functions of the health department, mainly Chicago, and the proponents of that bill were our ever present "League for Medical Freedom," composed of some persuasive ladies and a few petticoated men. The good ladies were down there telling stories that babies were literally kidnapped from their mothers' arms, when they had a suspicion of a contagious disease, and whisked away to an isolation hospital. They told further that a nurse would go to a front door and entertain the mother while a police officer or an officer of the health department would climb into a back window and take the child to an isolation hospital. I am bringing these thoughts to you because that bill on that kind of propaganda backed by the persuasive ladies, backed by that story succeeded without any argument in passing both the Senate and the House. It proves conclusively to my mind that legislators are not sufficiently interested in what might be termed bills of minor importance, and while I am not describing the doctrine of health matters as of minor importance, it is looked upon as such in the legislature. The bill was passed, went to the governor for signature, and a sizable group of us protested and the governor was very interested and saw the atrociousness of the bill, which purported to make the health authorities get a court order

before they could even enter a home to make an investigation to ascertain whether there was a contagious disease there or not. The governor vetoed the bill.

I am not saying these things because I am condemning the legislators. They had fourteen hundred bills there last year, with which they should have been thoroughly familiar, and it was a physical impossibility to be fully cognizant of their contents before they registered their votes; in other words, if a properly organized information committee of physicians is not kept ever alert in the legislative halls, not only of the several states, but also at Washington, these dangerous bills come cropping up, go on their way and become laws and then we sit down and criticise them for the negligence and unfortunate conditions that the public is placed in when the laws become operative.

May I not ask your further indulgence by attempting to substantiate my charge of our political tolerance by several other important issues of the day?

I do not find that we are taking an active interest in the various amendments that have passed and are pending relative to the United States Veterans' Bureau. Now, I am speaking as an ex-soldier. I was in the service twenty-two months and I really feel I have the right to criticise bills of this sort where probably some who did not serve in the war might feel some little fear.

I would like to ask you why any ex-service man who is amply able to pay for his own hospitalization, in the event of a chronic illness or a surgical operation having no connection with his military service, should become a charge of the United States and be treated at the expense of the public fund. Does it really follow that the man who served his country should come back and be placed upon a charity basis? Is patriotic valor to be rewarded by a paternalistic attitude? In the original Veterans' Bureau Act, passed way back in 1918 or 1919, we have words to the effect that treatment is for "disabled persons, discharged from the military or naval forces of the United States," and then later on in 1921 we find a safeguard in the amended act making such treatment incidental to those diseases or injuries "incurred in line of duty." Then later along comes another amendment that it is necessary to apply for such treatment within one year after discharge. Even as late as March, 1924, we find the wording, "If wound, or injury, or disease was incurred in line of duty and not caused by his own wilful misconduct." In 1925 another liberal amendment became a part of the law with the provision for "Hospitalization and necessary traveling expenses to veterans of any war since 1897 without regard to the nature or origin of their disabilities," and then it further provides that preference be given to those financially unable to pay for hospitalization or traveling expenses. Inferentially, at least, a millionaire ex-service man is entitled to traveling expenses, hospitalization and care of the Government if he chooses to avail himself of them, and if there is no bed for him the director is authorized to employ additional facilities to accommodate him.

There is no more reason for the soldier who is financially able, and cannot trace his disability to his military service, to become a charge of the government than there is to allow the firemen or the policemen throughout the United States, who are daily risking their lives, to have the self same service at the expense of their government.

In 1926 another amendment is being considered in Congress that in addition to the endorsement of the liberal provisions that I have just spoken about, we find army nurses, contract surgeons and contract dentists are to be included. And then there is a movement on foot to include civilians who were connected in any way with the army during the recent war. It is not difficult to conjecture that more liberal amendments will be considered in the future, which merely means that more physicians, and more hospitals will be under federal control for the treatment of those who have no rightful call on the government for the relief of their ills.

I happen to be secretary of the U. S. Bureau of Pensions for our district and there is a law that gives every soldier of the Civil War fifty dollars per month after he has reached the age of sixty, irrespective of physical infirmity, and then if he is incapacitated to a certain degree he receives the maximum of seventy-two dollars per month. I have had old soldiers come into our office who were very wealthy, and because the law says they were entitled to that seventy-two dollars they claim it. We have dozens of such men

who are not in any way charges of the county or state and yet the law pauperizes them.

I would be the last one in the world to say anything that would detract from the patriotism of this thin line of gray haired men who fought the Civil War, but I am saying when in our present day we have a hospital bill, as provided in the Veterans' Bureau, under which thirteen thousand patients were hospitalized last year, which was seventeen per cent. of all cases that were hospitalized, and who had no claim on the government from the standpoint of showing their injuries or illness were an incident of their war service it is wrong—all wrong. These men cost the government five million dollars.

Please do not misunderstand. I believe that the government cannot do too much for the sick soldier, whose disability was incurred in line of duty. I believe that every scientific treatment known to the medical profession, and every appliance incident to surgical treatment, irrespective of cost, should be freely furnished those men whose service rendered them ill or disabled.

If the liberalization of this act continues it is only a step further to see how the proponents of such measures will advocate the necessity or at least desirability of including the children and all the dependents of soldiers under the same hospitalization privileges, irrespective of financial status or disabilities traceable to a military source. Professional indifference regarding the political attitude is in my opinion a factor in all this.

I think we place too much confidence in our Federal Government in such matters, which is after all merely a group of citizens selected from each of the several states and who sojourn at Washington. We find lay propagandists can work with very much better concentration of effort in Washington than they can in the forty-eight different states.

Another instance of professional apathy which should have aroused every medical college in the nation is when the Secretary of Labor authenticated some six or seven chiropractic colleges as being immigrant educational institutions, which allows foreigners to merely say they want to go to a certain chiropractic school, and even if the quota of that country has been filled they are allowed to enter because the school is on the list of accredited scientific universities. Of course the chiropractic schools have been very prompt to realize the good propaganda this is, for tacitly at least the United States has approved the schools as accredited schools and so notified every United States consular office throughout the world. They have their representatives in Europe, and any foreigner saying he wants to go to the United States, and is carried on the roll as a resident student of that school, is permitted free passport by the United States, which is another situation that certainly demands our attention and certainly shows our tolerance in things of this sort.

Frequently people are only aroused when individually wounded and many of us may aver that the Maternity Act is not desirable, but individually it does us no harm. Others of us may argue that the Veterans' Bureau is too liberal, but there is no necessity of being unduly alarmed. Then again others may maintain that the approval of chiropractic schools as accredited schools of learning by the government with no thought of first investigating their scientific standing may be wrong, but certainly not a thing for physicians to assume any of the blame for or worry about.

I will call your attention to one more federal activity, which may be closer to home, i. e., the present pending amendment to the Narcotic Act now before Congress, and probably it may kindle the fire of protest in some of us. Briefly the amendment purports to empower revenue collectors to refuse narotic permits to those physicians whom they *suspect* to be drug addicts.

In my experience in life insurance in reviewing thousands of inspections on applicants, not infrequently, will the inspector say, "He looks like a dope fiend," when upon investigation it is found that the applicant is a thin, sallow looking individual free from any narcotic habit. Such errors of impression would be made of men in this room by internal revenue inspectors, and in a like manner that physician would be compelled to go to law to prove his innocence or go without a permit to prescribe narcotics.

Again the proposed law authorizes the pharmacist to decide whether a prescription for narcotics is necessary and has been prescribed in an ethical manner. Physicians will have to register and report each dose of any narcotic administered. They are not privileged under this act to treat an ambulatory addict. These and several other unheard of provisions are contained in the amendment, which our all too complacent medi-

cal body will have to adhere to if it becomes a law.

Now, after all, our job starts at home. If it is well for us to criticise and, even to advise the federal government, and if we, in our daily work have time, inclination and ability to advise our state government or even our city government, then if you accept my idea of politics as being more than the mere management of any association, corporation, village, medical society, etc., our job as I see it is to have an organization within ourselves that functions at all times.

It was my pleasure in the last six or eight weeks to go with Dr. Munson, your councilor, to each of the component societies in his district, and I was agreeably surprised at the willingness of the medical men in the lesser populated communities to do something and have programs that are worth while. We addressed groups of physicians as few as seven and then on up to more than one hundred. Our organization reminds me very much of the army. You all know, I believe, how an army is formed. General Pershing at the head of the A. E. F. had nothing to do with the battle array except in an executive sort of way. The army is composed of integral parts, of a certain number of divisions; each division is composed of regiments; each regiment of battalions; each battalion of companies, each company of platoons, and finally you get down to a squad of men composed of a corporal and seven men. That is the unit of the U. S. army. And so your county society is the unit and if the small society in the state of Illinois does not function, if the secretary of that society has not a vision, if he does not have the idea that the society is just as important as the Chicago Medical Society, he is in my opinion derelict in his duty. There could be no American Medical Association without state societies. There could be no state society without county societies. There could be no county society without members.

It seems to me that on the shoulders of the secretaries of this society rests the work of the society. Now when it comes to a matter of finance, which all organizations must necessarily be interested in, it would appear to be an easy task to go out and tell any thinking doctor in your district all that is being done for him for the amount of dues that he is asked to pay.

The lay educational committee last year functioned in a most efficient manner, but a few of the societies did not understand all that it was doing; they wanted to know more. When we told them of the different activities of the committee they were all pleased and willing to lend their aid. We were pleased to hear from a great many of these small districts of their receiving information that the lay educational committee had kept up an intimate contact with lay organizations. The result was that the leaders of the Federation of Women's Clubs deemed it inadvisable to carry on an attempt at the last legislature to put over the maternity act. And if the lay educational committee had not done a thing else they returned in this service alone the full value of dues to each member.

In closing I will ask the privilege of reading a short paragraph from the little pamphlet I picked up downstairs at the history exhibit. I like the thoughts it contains. Speaking of the early doctors, it says:

> Records reveal that earliest physicians were community leaders. Men far above the average intelligence of their day, they were sought as sword and buckler of the people. Their task as public servants involved legislative, judicial and executive labors in the machinery of government. In a word the early doctor was supposed to keep the mechanism of environment running as smoothly as he did the mechanism of the bodies of the citizenry. As time passed physicians found their own profession so exacting and absorbing that they refused the additional burden. The divorce of the church and the state has been scarcely less sharp than the divorce of medicine and the state. For this relief from burdens civic, the medical profession and the citizenry are beginning to pay too heavy a price. Handicapping legislation is resulting in the practice of medicine being mismanaged by lay people. Insidiously the work has found a foothold. Only by direct combat can this evil be undone. "History repeats itself." With eyes opened, the physicians of today will realize how necessary it is for them to resume the burden borne by their pioneer forebears.

I do not know who wrote it. Again I will charge it to Dr. Whalen. But I will say that this is a day when we must think of things. Act if we will, but it is certainly before us, and we cannot get away from being charged with negligence in the care of the public health if we are going to sit idly by and merely criticise, because after all there are many high idealists in the lay organizations, who are attempting to do these things, and I find they are very willing to listen, if properly apprised by our profession, so I trust the small local societies throughout the state of

Illinois will take on added individual responsbility because they are an important part of the Illinois Medical Society.

DISCUSSION

Dr. E. W. Fiegenbaum, Edwardsville, Ill.: You have just been permitted to listen to the words of a man who I believe has done more for the interests of the medical profession, at least in a political way, than any other man in the state of Illinois. I fully endorse all that he said, and I fully endorse the plan on which he and his associates have been working for the interests of the profession.

You have heard that forty-nine bills more or less obnoxious were introduced in the last legislature that would have been vitally detrimental to the profession. Who killed those bills? Did the physicians in their offices scattered throughout the state of Illinois kill those bills? No, they were at home tending to their own particular business, but fortunately the State Society in its wisdom had some men on guard in the state capital and the killing of those obnoxious bills was the result of their endeavor. I know something about the medical politics of this society for quite a number of years. I will not say just how many. And I know that at no time has there been as consistent a plan for promoting our interests and killing of opposition as this State Society is working under right now. The Legislative Committee, headed by Dr. Neal, does not ask you to leave your homes and rush up to the state capital whenever a bill is presented that we do not like. On the contrary, they ask you not to come up there because you could do no good after you got there; but you can do a world of good in your own home, in your own counties, if you would just listen to Dr. Neal and his Committee and do what he says for you to do. He will write you a letter to do something in your own neighborhood that takes but very little time, very little exertion and would do a world of good. He asks you to go and see your Representative who lives as your next door neighbor; maybe you are his family physician, and he asks you to sit down with that man in his home at the fireside and talk this matter over with him and show him how detrimental that would be to the community at large, as represented by the medical profession.

Some time ago it was my pleasure to sit in the House of Representatives talking to one of our legislators and a very obnoxious bill was under consideration. It was about to come to a vote, and he said, "Doctor, I want to show you just our position in this matter," and he opened a drawer of his desk and he took up a stack of letters, fifty, sixty, maybe seventy-five, written by the proponents of that bill, our good friends, the Osteopaths. All letters written by Osteopaths or their friends were in his desk. Now, he said, I want to show you with what an avalanche of unanimity the medical profession has written me, and he pulled out another compartment and showed me three letters.

Among others in my immediate neighborhood I appeared before a committee in the legislature on a certain bill. When we got into the committee room one side of the room was filled with the friends of a measure that they wanted to put through. I will estimate the crowd at seventy-five to one hundred, and at the head was a paid attorney, from Chicago, who made a very eloquent speech. He ripped the cerulean blue from one end to the other and when he got through the American eagle didn't have any tail feathers left. On the other side of the table were five doctors. Well, needless to say, we did not impress that committee as though we wanted that bill killed very much. That has been the attitude of the medical profession in Illinois.

Dr. Neal very gently says the attitude of the physician toward these measures is very tolerant. That is a fine parlor speech. He is more than tolerant. He is absolutely indifferent and is asleep. He does not even know that that bill is up before the legislature until after it is passed and somebody steps on his toes and then he begins to yelp.

Dr. Neal wants you to help him in a way that will cost you not a cent, cost you but very little time, and it will be tremendously effective, and that is to stay away from Springfield, stay away from the legislature. Unless you are schooled and versed in a way to approach the legislature you do more harm than good, but do your work in the home, with your personal friend, the Senator or Representative from your district. Talk to the man as though you meant it, as though it were a matter of life and death to the community and that the average doctor is in favor of killing a certain bill, or promoting another bill that is in our interest. Too little of that work is being done.

I want to close with a prediction and I want you to understand that I believe in it with all my heart and soul, and it is this—if we could have a united profession all over the state of Illinois, bent upon the one object of promoting good bills and killing obnoxious bills, it would be but two or three sessions of the legislature until we could have a medical practice act enacted in the legislature that would not allow a man to practice medicine in any department whatever until he came through the one door that all of you men have had to come through. Another thing, it would take but two or three sessions of the legislature, if the proper spirit was developed in the state of Illinois, before every obnoxious piece of legislation would be wiped off the statute books.

Dr. Charles J. Whalen, Chicago: First I want to compliment Dr. Neal. I think he made the speech that I was intended to make and they called upon him. The only difference is that Dr. Neal can tell it so much better than I can.

I am reminded of a little story I heard at one time at one of the sessions of the legislature at Springfield. They said there was a man who hung around the legislative halls and I think his name was Peters, Jim Peters. He was an attorney, practicing in the city, and handicapped because he stammered. One day one of the legislators in his idle hours said, "Jim, who is the greatest lawyer in Springfield?" He replied,

"Jim Peters," in his stuttering way. The legislator said, "I think you will have a great time to prove it," and Jim answered, "I don't have to prove it, I admit it."

I will admit some of the things that have been said here regarding the policy of the ILLINOIS MEDICAL JOURNAL at the outset of our campaign along the line of combating vicious things in government. The JOURNAL met with very little co-operation and I will tell you very frankly it was somewhat of a discouraging campaign on the part of the editor. But time has mellowed the situation and today it is a great deal of satisfaction to me to know that, as Dr. Neal says, the great men of the country are taking the very attitude that the JOURNAL advocated a great many years ago.

One of the regrets in my career in medical affairs is the fact that I did not do as I wanted to do when the Harrison Narcotic Bill came up, and that was to fight. I did not believe the bill was right in principle, and of course time has proven that it is not the correct way of handling the narcotic situation. Instead of improving the narcotic situation in the country it has caused it to grow worse. When the Compulsory Health Insurance movement came up I recall meeting one day the secretary of the Committee on Health and Education of the American Medical Association. He asked me what we were doing to cooperate with the proposed Compulsory Health Insurance Act, and I said "Nothing." He remarked that he thought it was time that the Chicago Medical Society appointed a committee to deal with this work and so that was the beginning of the health insurance movement in Illinois. I was told by the gentleman mentioned above that "Compulsory Health Insurance was coming regardless of anything we might do and that the proper thing for the society under the circumstances was for it to go in and get the best bargain possible." I reported this conversation to the members of the Council of the Chicago Medical Society and very promptly was asked to serve as chairman of a committee on compulsory health insurance. I begged to be excused but was told the only function I would have to perform would be to call the committee together. That seemed to be a very simple proposition. We started out with the idea that we had to cooperate with the compulsory health insurance movement and attempted to get some data along that line.

Over Cook County in the various branch societies we staged a program on compulsory health insurance. The officials of our great American Medical Association were proponents in the movement. Their names were on the literature, the letter heads and the advertising of the proponent organization. They were all on the literature of the advocates of compulsory health insurance and were all in favor of it.

When our first meeting was held in the west side branch of the Chicago Medical Society the proponents had their inning. Then up from the ranks came a man least expected, Dr. Edward H. Ochsner, who opposed the adoption of compulsory health insurance. He told about his experience with its operation in Germany, where he had worked under it when he studied abroad. This was the first inkling we had that compulsory health insurance was not what it was represented to be by the propagandists in this country. Then and there a few men such as Dr. Ochsner, Dr. Chapman and eight or ten others started in to oppose the officials of our own mother organization. And gentlemen, if you think it was any pastime, any pleasure, to go out and fight our own official family, I will assure you now that you are laboring under a delusion.

It was necessary for us to go out and fight some of our most intimate friends, but we believed that it was not the thing for either the people or the doctors of the country, so we fought it to a finish and as a result compulsory health insurance is not here to curse us. That it is not here calls for credit to be given to a very few men in this organization.

Of the maternity bill the same thing is true. We went through the same experience. Our official family was afraid of the League of Women Voters or somebody else. When we got officially into the fight I sent Dr. Humiston over to the A. M. A. and they told us over there that Dr. Work did not believe in it but some of the members did and they were afraid to take any action. So it remained for this organization again to go out and lead the fight against the Sheppard-Towner bill. How effectively we operated I presume I do not need to tell you.

A peculiar thing happened when the time came to oppose the Sheppard-Towner Bill when it was on official hearing in Washington. The State of Illinois Medical Society was the only one in the Union that was officially there to oppose the enactment. One of the insinuations thrown at Dr. Humiston was the fact that the A. M. A. was not opposing the bill. A short time ago Dr. Chapman sent me a clipping from *Medical Follies,* written by the present editor of the A. M. A., in which he gives credit to the A. M. A. for opposing the Sheppard-Towner Bill at Washington. It was of considerable amusement to me—not that we care who gets the credit particularly—what we are primarily after is the defeat of this kind of legislation, but after this State Society had waged the fight which was felt the country over, it seems an ironical situation when our friends are claiming the credit due this organization. And so we might go rambling on citing instances along the same line.

The newer menace confronting both the public and the profession is the fact that persons untrained in medicine, the country over, feel that a great deal of medical work can be either directed or taken over completely by lay people, and that is the dangerous trend of the times. We have got to fight it, and fight it by organized effort, and in no other way will you get back control of the practice of medicine to those fitted to do the work.

Now then, getting back a little way to a time long before I was editor, a man then properly or improperly designated as a highbrow, came to me and said, "Whalen, I read in the JOURNAL your article, 'Whither are we drifting?' Your prophecy on the future of medicine appears to me to be the imagination of an

overworked mind. The practice of medicine is in no danger of being ruined or taken over or directed by lay people."

Four years ago when the Public Health Institute of Chicago came into existence this same gentleman came to me and said, "Can't something be done? The Public Health Institute is going to take over the entire practice of medicine and can't you devise a scheme for heading it off?" I said, "Doctor, I remember about fifteen years ago you told me the things you are complaining about could never come into action, that the practice of medicine could not be taken over by lay people or corporations." He answered, "Yes, I thought at that time you were on the wrong track but time has proven that what you said and fought for was right."

We did have an organization in Cook County that was worth something and we certainly cooperated to bring about the defeat of vicious bills, the very things that Dr. Neal and Dr. Fiegenbaum and the other gentlemen have been telling you about today. What has happened in the past is only an indication of what is in store for you in the future if we do not thoroughly organize. Most of the men you have elected to office in this society have no selfish motives. They are men who believe in the integrity of medicine and the upbuilding of this organization and not one of them would sell the medical profession of Illinois for a million dollars cold cash. They are out for your interest, for the maintenance of the integrity of medical science.

Thank you.

OBSERVATIONS FROM THE STANDPOINT OF A NEW SECRETARY*

B. V. McClanahan, M. D.

GALESBURG, ILLINOIS

I appear before you today purely in the role of a tyro in the functioning unit commonly known as the County Medical Society, and have been requested to give you, as the title suggests, some of my personal impressions upon assuming and taking charge of the business end of a county medical unit. You will pardon my referring to this as "taking charge," but I find that such is exactly the case.

The county society itself may not be a serious affair, but I am willing to go on record with the statement that the position of being secretary, and I mean a worthy one, is a serious undertaking. I am reminded in this connection of the story written by Earnest Thompson Seton of the little bull terrier "Snap," who led the pack of wolf hounds. Without the indomitable "Snap," the pack of hounds were hopeless; they had no coordination, they had not the cooperation of each other that they needed in a concerted attack. But with the responsibility centered in "Snap," who takes it, they go forward and accomplish the end for which they as a pack are intended; in short, they get the wolf. "Snap" suffers, however. He not only suffers; he is killed.

In the preparation of this paper these three words appear to me to be emphasized and necessary, from our standpoint, for the welfare of the organization. They are cooperation, coordination and coercion.

There are the same tendencies in the society that are to be found in any club or body of members who strive together for the same end—that of favoritism. Oft-times in this sense toward those who are the most willing to help along the lines of progress, but at times favoritism amongst certain groups, and, I am sorry to say, to further their own interests also. This failing is a human characteristic and for this reason a county secretary should not be too human. His duties call for the last word in impartiality to be 100 per cent efficient. To respect and properly evaluate the wishes of everyone, especially a group of scientific men, is as you all know a herculean task. To be able to be always right in our judgment, even in attempting to carry out the wishes of the majority, is the task we have before us.

I wonder if it would not be advisable in a great many of the county societies, especially those in which there is a tendency to a general lack of interest, for the position of secretary to be passed around and in this way for more of the men to have a chance to see the inside workings of the organization. This attitude, I fear, would not meet with the approval of the state secretary for the reason that he has his hands full already in writing us hurry up letters on one and all matters, not the least of these being the question of dues. There are a great many doctors, for years members of their county societies, who have no conception of the time expended and energy required to carry on the society. The principal interest is aroused when for some reason or other they fail to receive a copy of the Journal, and immediately they want to know the reason. In fact they do not know what the county society is, except from the program standpoint. I must admit that since I have been in this work I have come to realize more and more the importance of it all and when

*Read before the Secretaries' Conference, Illinois State Medical Society, Champaign, May 18, 1926.

I am through being secretary I will have learned my lesson and will profit thereby.

Being so new at the game I am reluctant to offer criticisms of any sort, but observations of the sort that I am trying to depict naturally lead one to wonder if there are not a few things that could be undertaken that would simplify both our work and also that of the state secretary in his routine dealings with us. I am in sympathy with him and he is a hard worker who holds his position efficiently. His task is doubly ours. He not only has to get us to do things but he also has to prod us sufficiently to get us to get something out of someone else, *i. e.*, the individual members.

We all need cooperation in the society and also the cooperation of every individual member who has any interest at all in the practice of our profession. There is too little of this in our own unit and I suspect that the same might be true of a great many other societies. This cooperation must extend further than the mere attendance upon the programs. That, of course, is necessary but a far greater help often is to be able to ask favors, requiring a little time and thought, of any of our members and leave with the feeling that they will be accomplished without further reminding. This is I feel one of the real tests of the interesting and live member. Moreover, a service on any one of a number of committees should be looked on as a duty instead of a hardship.

We need coordination in the society. We need coordination of a type that is above all the petty jealousies that are so prevalent among professional men, whether they be of our profession or any of the others. In short, the welfare of the county Unit is far more important than the welfare of any individual or group of individuals Many are not able to see this fact but nevertheless it is true. Without exception I will state that I do not think anything is impossible to the individual county societies; nothing is too great for them to accomplish in their communities, if within the ranks of the organization there is absolute cooperation and coordination.

However, the roseate hue of this bright picture is dimmed by the fact that coercion oftentimes is more in evidence, and more to be used, than either of the above. You ask a man to serve on a committee and then you have to go around to see that he attends, or have to work with him in order to get service. You send out your regular statement to the members, for the smallest possible amount that the organization can exist on, with the result that about ten per cent pay their membership fees during the first month. Over half the members require a second statement; some many more and some even having to be paid a personal call to keep them from being dropped from the list. Merely coercion on the part of the officers to try to keep the membership together. There is nothing active nor progressive about service in such a manner. There is merely existence at best.

Regarding the records that are required to be kept by the secretary of the society there seems to be about as many varieties as there are secretaries themselves. I doubt if there are at the present time any two secretaries keeping the same type of record, uniformly, from which all the information can be secured at a glance. Would it not be an added feature for efficiency, and also a labor and time saving device, if we coud each year be furnished with the necessary sheets from the state secretary upon which we could list all the data necessary to know exactly where we are at any time? From these same sheets, or a duplication of a portion of them, could be furnished the list of members that is to be sent to the state secretary each year. These could be uniform, could be kept in a loose leaf binder especially for this purpose, which could be furnished by the state organization at a cost sufficient to cover expenses of same. Uniformity will in this respect relieve the work of the State in handling the county accounts and will also relieve the new secretary of a great deal of adaptation to different forms of bookkeeping when he takes over the new work. In this way we could change secretaries more frequently and as I have said before I think that this would be a good feature. In a recent conversation with Dr. Snively, secretary of the Fulton County Medical Society, he showed me his method of handling this situation. A sheet that he himself rules out and marks off, and on which he has all the data regarding dues, etc., and in addition the members attending each individual meeting and whether or not they took any active part at the meeting. Simplicity and uniformity will help a great deal I feel in this matter.

No criticism is worthy except it be of a constructive nature and I hope that I have conveyed

only this idea to you in my talk. We have a wonderful organization with unlimited possibilities, but we are not making the most of them. We are not 100 per cent efficient; in fact I dare say some of our organizations are not half as influential in their communities as they should and could be. My plea is that we simplify our records, that we unify them and in order that we may accomplish the greatest possible good that we exhort every member to do his utmost toward the cooperation and coordination for the best interests of the profession and the county medical society.

DISCUSSION

Dr. T. D. Doan, Carlinville: I feel that the man who assumes the office of secretary of a county medical society has assumed, as Dr. Figenbaum would say, a real job. When the secretary begins his work the first time he feels that he has much to do if he intends to be a one hundred per cent secretary. I feel that I have been largely toward the one hundred mark for for fourteen years I have been making a passing grade, and each year have passed into another year of service.

The secretary, in order that he or she may be successful, must necessarily be a politician. I do not know what that means. In other words, the policy should be assumed by the secretary that all of the members will be prevailed upon easily to part with their money. Some of the doctors have money, you know. A record kept by the secretary which might be investigated by an expert would be a very nice thing to have. Most of us do not keep that kind of a record. Naturally, if there is a program committee, the secretary is one of the program, and in many cases all the program committee.

When one has served a few years as secretary he begins to assume that he had work that is occupying a large part of his time if he is successful. What I wish to say is this—when we assume the office we should not assume too much of an attitude of a person who is a martyr; rather assume the attitude that we are working for the upbuilding of the medical profession in the county in which we live and in which we work. If the medical profession is builded up in the county it naturally will be in the state, followed by that of the national.

If you will pardon me for contradicting your statement, Doctor, the secretary naturally should assume the place one year and keep it until he dies of old age. He can do more with the society, if he is a capable man, if he follows along a line of progress which he assumes himself, and which is not bothered by his having another person take his place this year and another the next or he go back instead.

The assuming of the office is assuming a responsibility which every secretary who has held the office a few years realizes is a very large one, and yet it is full of opportunities. I have been well paid for my services as secretary by the thanks of the society of which I have had the honor to be the secretary so long.

Dr. B. V. McClanahan, Galesburg: I think what appeals to me probably in this matter is the difference between youth and some one who is a little elderly in these matters.

I feel as though we have to have progress, and to have progress we have to have capable men, and that is the reason I think we need a change. I do not think any county secretary should hold his job until he dies. I think the same thing will appeal to you the same as it does to me. I would not want Dr. Doan to be misled by what I said about the change or long continued office; I think there are times when a county secretary is continued in office because he is willing to take it. A change would be a chance for each individual man in the society to get more of the responsibility of the working of the society itself, and for that reason I think it would be a good plan.

REMARKS

MATHER PFEIFFENBERGER, M. D.
President-elect, Illinois State Medical Society
ALTON, ILL.

I think the monthly meeting plan to be adopted throughout the state would bear fruit. The monthly meetings we have had in our own county with your efficient secretary, have been very productive of good. I think through his work our society has become one of the best in the state. I am not saying that in the manner of bragging, but we have our monthly meetings, we function officially and when Dr. Neal sends a communication to our society asking for action we all get busy to see our senators and representatives to secure results.

To show you the condition we were in last year, when the higher rate was proposed to take care of the per capita tax we very easily raised our rate to twelve dollars per year without a dissenting voice. Dr. Fiegenbaum is sergeant of the squad down there and has perfect control, and he is a good sergeant secretary.

It came to my mind while listening to the papers here that it might be a good thing to have a secretaries' conference about four times a year. I do not know whether that would be productive of good results or not but it seems to me it would. Then in connection with the county societies it might be a good scheme to institute a method of keeping abreast of the time. It might be a good scheme to have the members review journals and report to the county society meetings that month their observation of the things that came out that were new or unusual.

and in that way bring about a discussion in the family.

We do need some education in our ranks. As Dr. Haggard or Dr. Pusey intimated in a recent address to the American Medical Association, there is some arteriosclerosis in the medical profession in keeping abreast of the times; in other words, the medical profession has its problems of middle life disease. I think the only way we can keep abreast is by working in our county medical society. The secretary can give the late information before the society quicker than anybody else. When the Wassermann test first came out our secretary had it explained before the county society. In this way he keeps abreast of the new things that are coming up. When the scarlet fever antitoxin was developed, he immediately had someone present a paper on this subject. So the secretary is really the man who is responsible for his county society's keeping abreast of the times.

I think it would be a mighty good thing at this time for the secretaries to arrange to have an exhibit prepared by the American Medical Association for its annual meeting and then transported to every county society for its use. That exhibit could be gotten into shape so that it could be sent all over the state in this next year, and I am sure it would be productive of mighty good results.

I am very glad to have this opportunity to meet the secretaries and I hope we will have as good a year, as Dr. Krafft's has been. He has shown mighty good results and set a very good pace for his successor.

REMARKS*

J. C. KRAFFT, M.D.
President Illinois State Medical Society
CHICAGO

I have learned in the past year that the success of the society depends entirely on the wholehearted co-operation of all component societies. We would be lost without the county society and its work, and the county society depends largely upon its secretary.

I disagree in this way with some of the remarks made previously. I believe it is a privilege to be a secretary of a county society. It gives a man an opportunity to carry on the things that he thinks should be carried on, and the success that he is depends entirely upon his avenue of approach. If you will call in your committees and work with them, show them what you want to do, lay out your program, and conduct the office just as you would conduct your own business on a systematic basis, the things that you can do as a secretary are limitless. That way of doing business is one of the reasons for the success we had last year in the state society.

I am an optimist. I disagree when you say that the doctors are asleep; I disagree when you say we have more arterio-sclerosis than any other body. Perhaps we have less. Contrary to popular opinion, our longevity is greater than in most professions. I disagree also when we talk about the passing of the general practitioner. It is not true. Figures do not bear it out. I believe there is no class of men that will work so hard and so willingly as the men of the medical profession when they are shown how and why. Such has been my experience in twelve or thirteen years, and we have been told of medical activities for a long time back.

Legislation is more easily handled in Springfield now. Why is it easier? Because we have a man down there who is business and system all the way through. Go up to his office and he will show you, just like the figures on a chess board, exactly where you stand and where I stand—what you and I can do for the society. If you can be as exact in handling the business for your own society in your own county you can get anything you want. That is the policy which is making our state society such a successful society. We have been successful because we listened to the advice of all of them; we have gone not on the highways but down the side ways and byways and talked to the men and they are all enthusiastic. I am leaving office knowing we are just starting on the road to wonderful possibilities; that with the caliber of men following us we are going to be the greatest state society there is.

DISCUSSION

Dr. Edward H. Ochsner, Chicago: It has been a great privilege to sit here this morning and hear the gentlemen who are doing things for the Illinois State Medical Society give us their observations, give us an insight into what has been done recently and also to give us something of an outlook into the future. These men have done herculean work for the profession;

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few of the members who are not in direct contact with the work realize the amount of time and energy and thought that every one of these men who have spoken this morning has given for the general welfare of the profession.

The county secretary's job is, according to my way of thinking, the most important job in the Illinois State Medical Society and in many respects superficially considered the most thankless one. And yet I believe that the men who have been in this service for five, ten or fifteen years will tell you when they get through with the job that it has been the most worthwhile job they have ever done and the job that has given the most satisfaction. After all, it is doing a worth while job well that gives an individual the greatest satisfaction.

It is a great privilege to hear these men talk this morning, and the only pity is that instead of a hundred people hearing their remarks there haven't been six thousand. If every secretary in the State of Illinois would get right down to brass tacks we could accomplish much more even than has been accomplished. You take the question of the Sheppard-Towner bill that Dr. Whalen referred to—we happen to have in the important office of President of the United States a man today who thinks just exactly as we do on the subject of bureaucracy, on the subject of the central government taking control of everything down to your and my individual affairs. We have a great man there, and if every doctor in the United States would put his shoulder to the wheel today and support President Coolidge in his fight against bureaucracy we might surprise ourselves. His speech at Williamsburg was a wonderful speech, and I am not so hopeless. I believe if our secretaries would get busy on the Sheppard-Towner bill right here in Illinois and get the people of the State of Illinois stirred up perhaps something would happen yet to put that nefarious piece of legislation out of business.

ADDRESS*

J. N. Jackson, M. D.,
President-elect of the American Medical Association
KANSAS CITY, MO.

It gives me great pleasure to have this privilege of visiting Illinois. I would like to say I am not coming here at the present time to read any lessons of instruction to the fellows of my profession because, after all, I am nothing but the president-elect, and it will take another year for me to get informed so I will be in position to give you information. In the meantime, I am trying to act as a sponge, trying to get the wisdom that comes from the men in the ranks and trying to find exactly where the men of this profession stand, because the American Medical Association should be the representation of these feelings and not a dictator.

I feel a good deal of sympathy with these secretaries here. My first job in the medical profession was assistant secretary of the National Association of Railway Surgeons; my next job of any importance was the secretary of the Missouri State Medical Society and I therefore have the opportunity of realizing something of the problems that confront a secretary, and I am going to repeat that after all the keynote of the success of any society is the secretary. He is the live wire. I have seen some societies that have grown up and grown to be very large and influential societies through the efforts of the secretary. Take the Southern Medical Society, a society relatively in an isolated portion of territory, and they had a live wire secretary, and incidentally I want to say that live wire secretary had the most beautiful live wire assistant I ever saw, and they hired a woman to assist that secretary, and they finally grew up to what is second to the American Medical Association in extension and influence in America today.

The same thing is true in these county societies. There are men that accept offices who never expect to do anything except to say they have the job. Real geniuses as secretaries are rare birds. The problem is to find out in your county society the men who come nearest being the men who are willing to work unselfishly toward the future with no recompense except what he can do because it is idealism.

I remember the time when a man was supposed to be a surgeon of tremendous experience when he had seen twenty-five abdominal resections. Then something new was being sprung every day and a man did not dare miss a single meeting of his society for fear he might miss something he did not care to miss. There was a time, for instance, when this fertile soil where we stand today was nothing but wilderness, and the first pioneers incurred hardships. Everything was new, but it developed constantly, and the result was the stimulation of the pioneer. And so we have that period in medicine—the beginning of things when we first understood what came through the microscope—new fields opening up stimulating enthusiasm. It is not quite as exciting as it was in pioneer days; the opportunity is greater now for constructive work than it was in the olden days. Then, it was a

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period of development, exploration and men did not leave very much in accomplishment, although some did. We are arriving at that period today where we sort out of the material the false from the true; everything has been tried remedially, therapeutically and in research work and we are beginning to sift those down. It is not quite as exciting, but it is far more important. So we are beginning to discuss these things prayerfully, I might say, and carefully; we are sifting out the evidence of all the opportunities that have been before us, so while we have not the excitement today to buoy up a man you have the worth while needs.

I think if the most of our county societies could hold your meetings in the evening and have a dinner beforehand and bring your wives with you, make it a social affair, as well as business, you will have a more successful meeting.

THE DECOMPENSATING HEART IN CHILDHOOD*

ISAAC A. ABT, M. D.
CHICAGO

It is doubtful whether a special chapter can be written on decompensation of the heart in childhood. There are those who will say on first thought that cardiac decompensation of young life must be identical with the same process in adults, though it will be conceded by nearly everyone that the physiology and pathology of the circulation is modified at different periods of life by the processes of growth and development and by the susceptibility to different types of disease. Thus, cardio-renal-vascular disease is almost unknown in childhood, while rheumatic cardiac affections are most frequent in young life.

In childhood, cardiac disease is seldom associated with chronic kidney affections and rarely occurs secondarily to the pulmonary diseases which are a frequent cause of heart strain and disease of adult life. The excessive use of alcohol and tobacco, arterio-sclerosis, as well as disease of the coronary arteries are practically unknown factors in the production of cardiac diseases in childhood.

There are certain peculiarities in the cardio-vascular conditions of childhood toward which the attention might be directed because consideration of the physiologic differences in the circulation of infancy and childhood and adult life, may throw some light on cardiac pathology during the various age periods.

The lumen of the large vessels in the new born is relatively broad. Indeed the whole arterial bed seems wider than in later life due to the active growth of all the organs. However, the increase in the lumen of the arteries is less proportionally than the growth which takes place in the heart volume. From birth to puberty, the heart volume increases twelve fold while the aorta in the same period increases only three fold. It is an important point in the pathology of the circulation during the period of puberty, that the arteries become relatively narrow, and that the heart volume increases at this period. The lumen of the capillary system in young childhood is also broad and this seems to be associated with rapid growth in young individuals. Seitz has maintained that in childhood the capillaries of the lungs, skin and intestines are broader than in later life.

One frequently observes severe cardiac breaks during early adolescence in children who had compensated lesions up to this period.

Disturbances of the circulation result when the heart does not respond to the demands made upon it. Sometimes this failure of cardiac response occurs while the patient is at rest, or it may occur when he is engaged in active exercise, or when he is acutely ill with a febrile disorder, or during anesthesia. All cardiologists assume that the normal heart during its incessant period of work, possesses a large margin of safety; that is, it has a functional reserve. Disease of the heart itself or of other part of the body which interfere with normal circulatory processes, may tax the reserve strength of the heart to a varying degree. Indeed, the normal reserve may be nearly used up or exhausted; or the individual may use his entire heart power, including the reserve, to the maximum. A heart working at such speed is more likely to fail than one in which the circulation is carried on adequately, or with sufficient reserve.

If the reserve strength of the heart is diminished with the production of symptoms, one speaks of a relative insufficiency of the heart muscle. When the reserve force is exhausted to the extent that the heart power is insufficient to maintain normal circulatory conditions, abso-

*Address before the Chicago Medical Society, April 7, 1926.

lute heart muscle insufficiency may be said to exist. It is generally maintained and there is considerable clinical evidence to support the view that the child's heart has a great degree of reserve strength and an extraordinary power of adaptability. The heart of the infant and child, consequently, stands out well against cardiac insults and resists up to a certain point, cardiac failure in an acute infectious disease.

It need hardly be said that the outstanding etiologic factors in the production of chronic valvular disease are rheumatism and tonsillitis. The toxic effect of diphtheria on the myocardium is not an infrequent factor in the production of cardiac degeneration, weakening the muscle of the heart sufficiently to exhaust the reserve strength and produce decompensation. The most serious cardiac affection of childhood is chronic pericarditis, which in its acute stage may have been the manifestation of a pancarditis. In any event, the presence of adherent pericardium exerts an unfavorable influence on the heart. It causes hypertrophy and dilatation. Adhesions interfere with the normal growth of the organ and decompensation may occur gradually or in some instances in a very brief time.

Cardiac decompensation may be primarily cardiac such as occurs in an organ which has been crippled by pancarditis, or it may be circulatory in origin with secondary disturbance in the dynamics of the heart. In those cases where the heart muscle fails, the outstanding symptoms are due to passive congestion of the organs. Cyanosis and edema are the prominent symptoms. With heart muscle failure, the patients often complain of pain and pressure in the heart area as well as palpitation, though these symptoms may be absent. The pulse is usually diminished, small and weak, the blood pressure is low, the veins are dilated. The heart area is increased in its transverse diameter. As the left ventricle loses power, pulmonary congestion with irritative cough and dyspnea become more marked and eventually pulmonary edema occurs.

As the right ventricle fails, congestive symptoms of the liver and kidneys, associated with gastro-intestinal symptoms, manifest themselves. The appetite is lost, there is constipation or diarrhea, and due to the congestion, there may be epistaxis, purpura, hydrothorax and hydropericardium. These latter symptoms, similar to the generalized cutaneous edema, occur most frequently in older children.

Before death cerebral manifestations occur, such as somnolence, apathy or convulsions. The heart's action may become slow as the result of cardiac insufficiency with heart block. All in all, heart muscle failure in childhood is characterized by swelling of the liver and dyspnea and is differentiated from the heart muscle failure in the adult by absence of relative tricuspid insufficiency, arrythmia and cutaneous edema.

In addition to the heart failure or decompensation produced by the disease of the heart itself, grave cardio-vascular conditions may be produced by disturbances in the circulation, particularly during the acute infectious processes. The occurrence of this variety of circulatory disturbance is not sufficiently taken into account. In patients suffering from circulatory failure or collapse, marked pallor of the skin is observed. It is difficult to explain the cause of this pallor. It is not due to an actual anemia because it has been frequently shown that the hemoglobin and red blood count are not decreased. While it has been shown in animal experiments, that severe infections cause the vasomotor apparatus to lose normal control, nevertheless, it is difficult to understand how diminished inhibitory effect of these centers would produce anemia. The histological studies of Wiesel and Wiesner showed that in a number of infectious diseases, pathological changes occur in the muscular coats of the arteries, possibly in some instances leading to their contraction. It is apparent that the explanation of the pallor is unsolved, though its existence is undoubted.

The classical experiments of Romberg and his pupils have shown that collapse in the course of infectious diseases is not primarily cardiac but of vascular origin. They think that a paralysis of the vasomotor center plays the important part. In some of the cases, however, a primary constriction of the blood vessels of the liver occurs which in the case of infectious diseases is caused by the effect of retrograde metabolic products. A fall in blood pressure results.

Circulatory failure in the infectious diseases may be explained primarily by paralysis of the vasomotor centers and it is doubtful if the heart participates at the onset. Romberg observed that in pneumococcus infections the heart does more work during the period of the infection than un-

der normal conditions, and that although there may be some vascular paralysis and a threatened collapse, nevertheless the heart remains compensated for a time.

This is true not only in pneumococcus infections but also in grippe and diphtheria. These investigations also show that collapse occurring during an infection does not depend upon direct damage to the heart, but is the result of vessel paralysis. In the circulatory type of heart failure which we have just alluded to, the striking symptoms beside pallor, are labored breathing and weakened heart action; the pulse is weak and easily compressible, and rapid. There is modified mental state, loss of power of voluntary and involuntary muscles, and diminution of secretion of urine.

The face is usually blanched, though sometimes the superficial veins contain a considerable amount of blood. The patient has an anxious appearance, and when coma or unconsciousness has occurred the face may be expressionless or mask-like. It is frequently shrunken and pinched; the chin droops; the nose is pointed and the tip is cold; in extreme cases the eyes have lost their luster. The patient, as a rule, is extremely weak; the eyes are rolled upward; the lips are pale or cyanotic. The skin is pale gray and appears bloodless. A cold perspiration occurs on the surface of the body. Respirations, as a rule, are rapid and frequently sighing. Breathing is labored and the Cheyne-Stokes variety may occur.

The muscles are relaxed. In extreme cases the patient maintains the position in which he is put. Very often voluntary muscular power is lost. The function of digestion is diminished and vomiting and relaxation of the sphincter of the bowel sometimes occur. The patient may be unconscious, though delirium may be present, with considerable mental excitation and continuous rambling speech. Frequently he is confused mentally, talks irrationally and incoherently.

TREATMENT

True Cardiac or Congestive Type.—When the heart muscle is capable of meeting the demands made upon it at rest, but shows signs of failure or fatigue when subjected to strain or effort, we may consider that there is a partial insufficiency especially if dyspnea and palpitation follow exercise. In these children activities should be restricted and long periods of rest prescribed. Tonics may be of value. The diet should be moderately restricted and fluids should not be given in excess.

Where congestive symptoms have already manifested themselves, the use of digitalis is indicated. The general rules governing the use of digitalis will naturally be applied. Digitalis should not be used in cases where a congenital malformation of the heart exists, nor should it be used even in small doses in the treatment of any diseases where there are no symptoms of heart muscle insufficiency. It has been suggested that calcium chloride be given in combination with digitalis. It is thought that the calcium exerts a synergistic action, increasing the effect of the digitalis and causing it to act more quickly. In some cases, it may be advisable to digitalize the patient by giving maximal doses for three or four days. When its effect has been produced it should be discontinued.

Circulatory Failure.—Patients who show circulatory failure should be placed in bed as soon as possible. External heat should be applied by the use of hot blankets or hot water bottles. Hot drinks should be given if the patient is not nauseated or vomiting. In the case of infants weak tea may be administered.

The cardiac stimulants are time honored remedies, although opinion at the present time is not unanimous as to the value of these drugs in circulatory failure.

The injection of camphor in the form of camphor oil has been and still is in general use. Pharmacologic experiments show that the results obtained are not constant.

Epinephrin is fugitive in its action and does not produce a sustained effect on the circulation. When given hypodermically it raises the blood pressure. It also acts upon the heart first by accelerating, and then slowing it. The latter occurs when the blood pressure is raised as a result of vagal stimulation. Epinephrin is therefore indicated when there is evidence of an acute circulatory collapse with rapid pulse and falling blood pressure. The drug may be given intravenously and may be considered of special value in the infectious diseases, particularly pneumonia. On account of its transitory effects it should be repeated at short intervals.

The action of pituitary extract is similar to that of epinephrin, the difference being a matter

of intensity. Pituitrin acts less rapidly, but its effect is said to be more prolonged.

It has been shown that caffein may cause an increase in the total blood flow without a corresponding rise in pulse rate. It raises the blood pressure, slows and steadies the heart. There is every evidence to believe that caffein is a useful remedy in the treatment of circulatory failure.

There is no universal agreement as to the value of digitalis in the treatment of circulatory failure during acute febrile conditions, though recent electrocardiographic studies show that digitalis exerts the same effect on the heart in febrile conditions that it does in the non-febrile state.

If during the course of an infectious disease the pulse becomes small and soft and the extremities cold and blue, the indication is to aid the circulatory organs. Digitalis is usually selected for this purpose. The use of digitalis in pneumonia has not been found beneficial in most instances. On the other hand, if the heart is defective in one way or another before the onset of pneumonia, digitalis may be indicated.

There is no basis for giving digitalis in every case of pneumonia. We are not surprised to find that digitalis has no effect in the acute infectious diseases because we have learned from Romberg and his students that the collapse in these conditions is not due to a cardiac insufficiency, but is caused by a paralysis of the smaller vessels. It is for this reason that the drugs which act upon the vasomotor center are more useful—caffein, adrenalin, pituitrin and atropin.

There are still some who believe that digitalis is effective in the circulatory failure of typhoid, and the drug continues to be used in the acute infectious diseases, after hemorrhages, prolonged anesthesia, and in collapse in general. One should not expect much from the use of digitalis in these cases, and the vasomotor stimulants are more definitely indicated.

The favorable effect of the external application of mustard in circulatory failure of infants and young children has long been recognized. This is a valuable therapeutic measure for the heart failure which occurs in pneumonia and nutritional disturbances, or in any condition in which heart failure is threatening or impending.

Rest and sleep are important factors in the treatment. Excessive manipulation should be avoided. Operative interference should be deferred and excessive treatment should be dispensed with.

The surroundings should be kept quiet. Anxious friends should be enjoined from disturbing the rest and quiet of the patient. Sleep should be induced. Sometimes a moderate dose of paregoric in infants or an appropriate dose of codein or morphin in an older child will do more to relieve circulatory failure than all other medication which may be employed. Indeed, it may be a life-saving measure.

ARTIFICIAL PNEUMOTHORAX IN PULMONARY TUBERCULOSIS*

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The only surgical methods which have to any satisfactory extent come up to our expectations in the treatment of pulmonary tuberculosis are those included in the term "collapse therapy." The term "enstpannung," of German origin, covers the idea of compression and immobilization. Collapse treatment involves ideas and principles that are in line with the ordinary ways of nature's healing process, and is at the same time in harmony with the physiological peculiarities of the organs in question.

Collapse may be produced either by artificial pneumothorax or, if this is unsuccessful, due to extensive adhesions, by thoracoplasty. I shall take up the subject of artificial pneumothorax only as the subject is quite important in itself. The main reason for bringing up this subject is to acquaint the general practitioner with its possibilities and give the results I obtained in a large series of cases under treatment at the Municipal Tuberculosis Sanitarium.

Artificial pneumothorax has been generally regarded as a standard measure of treatment since the International Congress for Tuberculosis held in Rome in 1912. Compared to other methods of treatment, pneumothorax in suitable cases must be considered as one of the best curative measures we have at the present time in pulmonary tuberculosis.

Functional rest is a very important factor in the treatment of tuberculosis. The lung is one of the organs of the body that never rests. The introduction of a sterile material in the pleural

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cavity will inhibit the function of the lung by collapse, thus giving the lung an opportunity to heal.

The treatment of unilateral pulmonary disease with collapse of the lung achieved by artificially closed aseptic pneumothorax belongs to the therapeutic measures which we have learned from nature. It has been known for a long time that a pleuritic effusions can have a favorable effect on a lung diseased by pulmonary tuberculosis. Similarly beneficial influence on the lung condition was observed in cases of spontaneous pneumothorax after the patient had overcome the first shock with its acute symptoms. This experience formed the foundation of the treatment of pulmonary tuberculosis with artificial pneumothorax. I shall not go into detail as to the early history of the development of artificial pneumothorax. Carson suggested it as early as 1821 and it was revived again in 1888 by Forlanini. Independently of these experiments, J. B. Murphy in Chicago gave pneumothorax treatments in 1898 and reported a number of cases.

The introduction of air into the pleural cavity will inhibit by collapse the function of the diseased lung. By compression the lymph flow is checked through the diseased lung; it further empties the lung of accumulated products of degeneration and, by flattening the lumina of the bronchi and alveoli, prevents the spread of infection by the bronchial tree route. This complete rest is directly responsible for the growth of the fibrous tissue which encapsulates the lesions and eliminates the disease. Saugman has mentioned the compressed lung as being emptied of its waste products "like a pressed sponge."

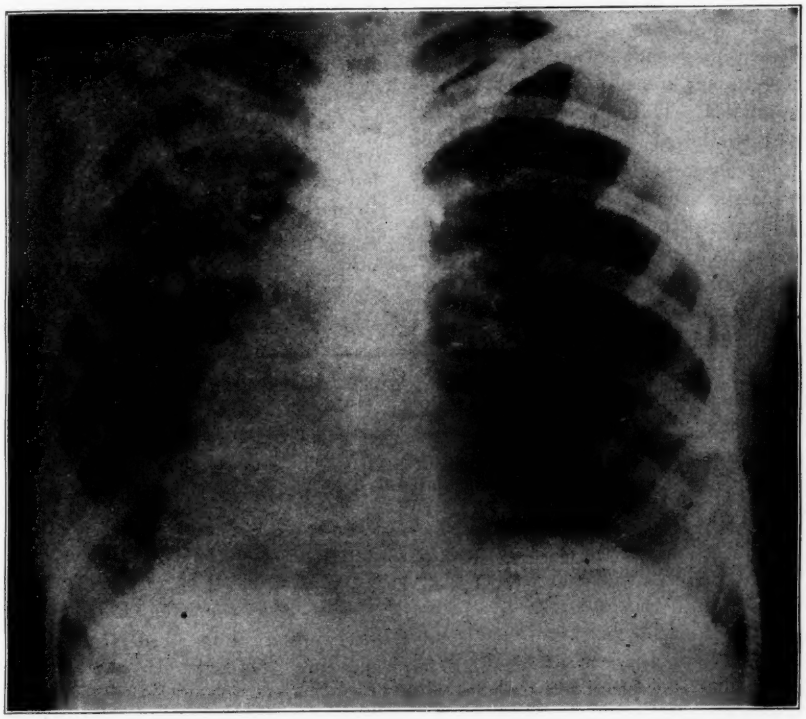

Fig. 1

Plate taken on admission of patient. Cavitation left apex. High temperature. Marked cough and very toxic.

In the opinion of various observers, following are the pathological and physiological fundamentals of the collapse therapy:

1. Collapse favors the tendency of the diseased lung to shrink and narrows cavities which could not heal without the removal of the tension of the lung tissue.

2. Collapse therapy creates physiological changes and uses the new condition of the collapsed and resting lung for the stimulation of the healing process.

3. It achieves the reduction of the volume of diseased region and relaxation and removal of the tension of the lung and stops the respiratory movement.

The reduction of the volume is increased by the extent of the pneumothorax—the more extensive the pneumothorax the more efficient the collapse.

A compressed lung shows a fleshy mass full of connective tissue; some of the blood vessels may be thrombosed. The tubercles are dry and are seen to be firmly encapsulated by fibrous tissue. New tubercles are seldom found. The factors responsible for the growth of fibrous tissue in a compressed lung are stimulation by toxins in the stagnant lymph, chronic hyperemia and inhibition of function in the lung. The uncompressed lung is found to compensate by becoming large with emphysema and hyperplasia. By the slowing up of the lymph circulation, the absorption of toxins from the lesions into the general circulation is impeded or arrested. In pneumothorax the clinical phenomena of phthisis, such as fever, night sweats and weakness are prevented and the body is thus given an opportunity to recuperate. Because the lymph stream is unable to carry away bacilli from the lesion, the process is localized to the affected area.

Types of Cases Suitable for Treatment—Matson in a discussion on the advisability of pneumothorax treatment states that few patients with pulmonary tuberculosis disease to the extent of demanding pneumothorax are wholly free from invasion in the opposite lung. In our cases, out of a total of 96, 42 showed evidence of disease in the opposite lung demonstrable by the x-ray. Forlanini, when he first described his technique on pneumothorax, insisted that the treatment be used only in far advanced cases after everything else had been tried and that the lesion must be strictly unilateral. While pneumothorax may be indicated in the fibroid unilateral case running an extremely chronic course, it seldom can be given, due to extensive pleural adhesions which are usually found in such cases.

Artificial pneumothorax finds its best indications in the progressive and acute type of the disease where infiltration, caseation and cavitation occur. The results are often striking in such cases, although the ultimate results are always better in the chronic type, if we can succeed in inducing a good collapse. The reason for this is apparent. In the chronic case the resisting power is generally good, while in the acute cases the benefit gained from compression of the lung does not offset the low resistance. In uncontrollable hemoptysis, pneumothorax is found very useful. By compression of the lung we are able to control the hemorrhage and to give the tuberculous focus an opportunity to heal.

While admitting the best results are obtained in unilateral lesions, yet in the apparently hopeless, far advanced case, where the active lesion is more pronounced on one side, pneumothorax is indicated and should be attempted. Forlanini, Brauer, Spengler and others have argued that all advanced cases should be given an opportunity to benefit by artificial pneumothorax. At times we may be astonished by the cure of even such patients. The removal of toxic material gives the patient an opportunity to muster his natural forces of resistance.

While hemoptysis is not often fatal, I have occasionally seen cases terminate by hemorrhage. When the usual treatments do not give the desired results, artificial pneumothorax should be induced. In cases where a definite diagnosis as to the site of bleeding was impossible, I have noted decidedly beneficial results even when the pressure was exerted on the opposite lung from the one in which the bleeding occurred. In our series of 96 cases, twelve were hemoptysis treated with pneumothorax and in all except one, the collapse succeeded in stopping the hemorrhage. Four of these cases have become arrested and have been discharged from the Sanitarium. It is well known that the untreated lung becomes affected only in exceptional cases. In spite of the increased work required of the untreated lung, the active lesions in that lung are often improved. In only a small percentage of cases do the lesions flare up in the untreated lung. I have noted one such case recently.

N. Betcher has come to the conclusion that a pneumothorax on one side exerts the same influence, to a lesser degree, on the healthier lung, since the tension in that lung is also relaxed. This theory is based on measurements of the

intrapleural space on both sides of the body of a woman of 30 who had been dead for 20 hours. The lungs were healthy, but the left pleural space contained a small pleural effusion. This effusion was replaced by air through a hollow needle. A needle was introduced into the right pleural cavity and both needles were connected with manometers. As air was introduced or withdrawn from the left pleural cavity, the pressure of the right pleural cavity rose or fell.

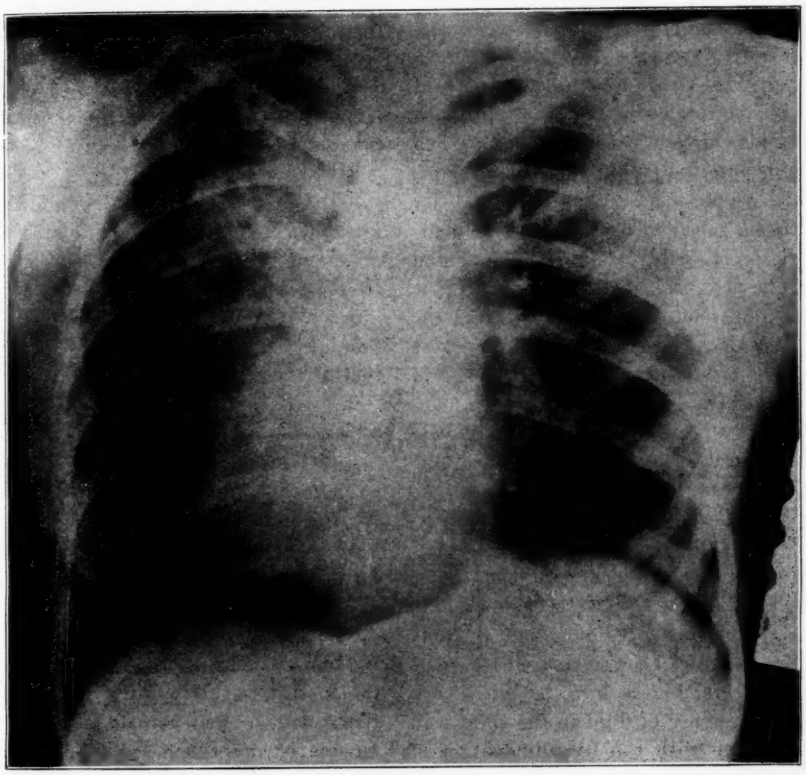

Fig. 2

Same case as Plate I. Beginning of pneumothorax treatment. In this case small amounts of gas were given. Improvement in general condition is marked. The compression is almost complete.

Betcher maintains that gas introduced into one pleural cavity relieves the tension of both lungs and that, strictly speaking, there is no such thing as unilateral collapse therapy. This inclusion of the healthier lung in the sphere of influence of the artificial pneumothorax is due to displacement of the mediastinum.

Various observers believe that even incipient cases should be treated by pneumothorax. I do not agree with this opinion. Many of the incipient cases will recover from their disease by a few month's sanitarium treatment. If, however, the disease is progressive, no time should be lost in waiting for something to happen; many lives could no doubt be saved by the judicious and timely use of pneumothorax. Although authors on the treatment have elaborately defined the absolute and the doubtful indications for the treatment, it still often happens that cases apparently most suitable do badly, while cases in which the treatment seems hardly justifiable do extraordinarily well.

Summarizing, I might say that artificial pneumothorax is indicated:

1. In early cases which do not respond to the ordinary rest and hygienic treatment.
2. In advanced unilateral cases.
3. In old fibrotic unilateral advanced cases which are semi-invalids.
4. Cases of pleural effusion if there is evi-

dence of active tuberculosis in the lung on the same side.

5. In recurring chronic pleural effusion.

6. In cavities.

7. In tuberculosis of young adults when the disease recurs after arrest.

8. In uncontrollable hemorrhage.

Contraindications—1. Active disease in both lungs.

2. Early tuberculosis which is becoming arrested by treatment on ordinary lines.

3. Extensive tuberculosis disease elsewhere.

The Apparatus—Each apparatus consists of two graduated bottles connected by tubing, one of which contains air and the other fluid. When the fluid flows into the empty bottle it displaces the air which is pressed into the pleural cavity through a rubber tube and the needle. The manometer indicates the intrapleural pressure and has rightfully been called the "Heart of the Apparatus." As soon as the needle enters the free pleural cavity, a negative pressure will be registered due to the vacuum in the pleural space. With inspiration and expiration the manometer will register the changes of the air pressure in the pleural space. With the aid of the manometer one can tell whether one is in the pleual cavity and whether the adhesions are extensive or not.

If in going through the pleura the manometer does not register, one of several things may have occurred. Either the needle is not entirely through the chest wall or it may have gone through the visceral pleura into the lung. Adhesions or the presence of fluid in the chest wall will also interfere with the free fluctuation of the manometer.

The use of nitrogen gas has been discarded and atmospheric air is now used, as it was found that there is rapid diffusion of the two bases—nitrogen and oxygen.

The Operation—Pneumothorax should be considered as a surgical procedure and strict asepsis is necessary. The site selected for injection is swabbed with iodine and alcohol. Sterile towels, thorough scrubbing of the surgeon's hands and the use of rubber gloves must be insisted on. A novocaine or butyn solution of one-half per cent. is used as a local anesthetic. Pneumothorax treatments may be given in the patient's home or at the physician's office. When possible, the axillary line in the sixth or seventh interspace is selected, because the chances of entering are better. Fishberg has aptly said that it is very difficult and often impossible to avoid pleural adhesions even with all the means of diagnosis which at present are at our command. Patients generally dread the first treatment but not the refills.

My practice has been to give small amounts of gas, 200 to 350 c.c. depending, of course, upon the presence of a free pleural space. These treatments are frequently repeated. I always finish the treatment with a negative pressure. The only exception is in the case of pleural adhesions, when high pressures are at times indicated and an attempt to break up these adhesions is made.

The best results are usually obtained when the intrapleural pressure is maintained at minus 3 or 4 cm. Stivelman gives the following principles:

1. To avoid sudden change in the intrathoracic equilibrium and in the relative position of the intrathoracic viscera.

2. To avoid high pressure in the presence of a flexible mediastinum.

3. Gradually but definitely to increase positive intrapleural pressure in cases in which pleural obliteration is threatening.

4. Determine in each individual case the pressure required.

Adhesions are the cause of many failures to attain a good compression of the diseased lung. A collapse must be complete in order to give the most beneficial results, although many patients will do well with only a partial collapse. In one of my recent cases only a partial collapse was possible. However, the patient is doing very well. She has gained 25 pounds in weight, her temperature and pulse are normal, the sputum has become negative and the troublesome cough has entirely subsided. Attempts to separate adhesions have been undertaken by Jacobeaus who described the method of "endopleural operation." By the use of the thorascopy apparatus (an instrument to visualize the pleural adhesions) it is relatively easy to see the existing adhesions and their attachment to the lung and to the chest wall. Jacobeaus has succeeded, by means of a platinum wire attached to the end of a long metal rod inserted into the pneumothorax cavity through a separate cannula, in cut-

ting some of these bands. It is possible in certain cases to cauterize the adhesions and thus secure a complete collapse of the lung. This is especially of value in those limited pneumothorax cases which have strong or membrane-like adhesions. Apical adhesions, which keep the lung tied up, are usually hard to reach. On the other hand, lateral adhesions can be dealt with easily when they have been extended to the highest degree of pneumothorax. It is not advisable to attempt the cauterization of surface adhesions as the lung tissue may be injured, with the possibility of hemorrhage and the opening of the tuberculous foci and cavities and consequent infection of the pleura. Jacobeaus himself has used this method in approximately 90 cases.

If the pleural space is found to be free and air is allowed to flow, the manometer should be consulted at each 50 c.c. of air given. As stated above, a small initial dose should be given. J. B. Murphy advised the giving of large doses—3000 c.c. while Forlanini gave 200 to 300 c.c. Clinical observations seem to favor the latter procedure. Among the advantages of the low pressure installations are no displacement of the mediastinum or heart; and effusions are not as likely to occur.

Refills—Frequency and Amounts—After the initial pneumothorax installation, the next few treatments should be given every third or fourth day, going into the same space as before. The amounts of gas given to refills should not be large, depending, of course, on the intrapleural pressure. After the complete collapse of the lung the frequency of refillings should be diminished. Success or failure depends very largely on the correct spacing of the intervals between refills and on maintaining the correct degree of collapse. The best results can be obtained when each patient is considered individually and the treatment is made to fit the patient and the patient the treatment.

It has been my practice to give the first four or five refills of 250 to 350 c.c. every third or

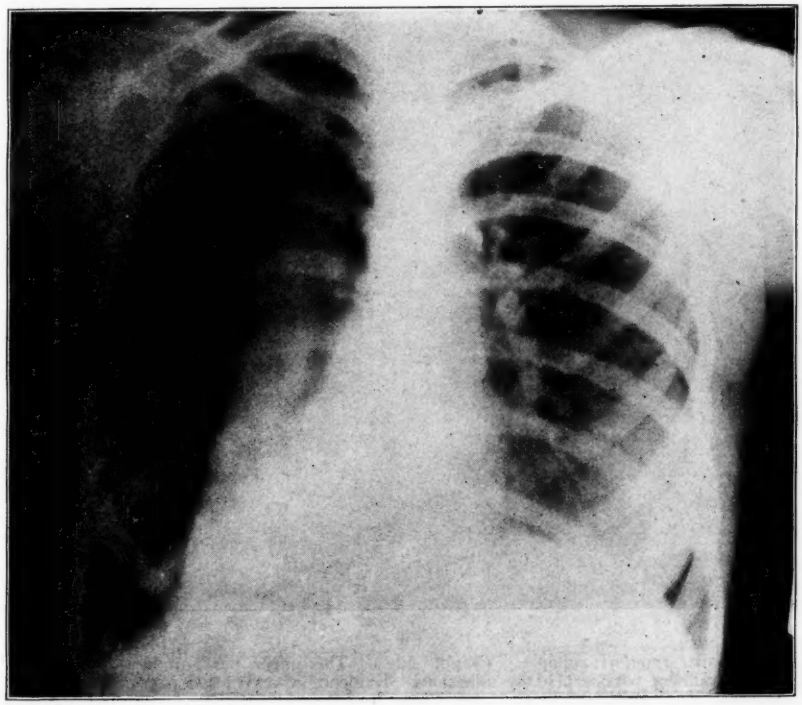

Fig. 3

Successful pneumothorax. Showing complete compression of left lung. Heart not displaced. No evidence of fluid. Temperature and pulse normal. Cough entirely subsided. Same patient as in Plates I and II.

fourth day. Manometer, fluoroscopic and physical findings should be one's guide. High air pressure should be avoided as far as possible.

Symptoms—Immediately upon completion of the operation the patient feels a slight difficutly in breathing, although this is negligible and often is not noted. When the gas separates adhesions slight pain is experienced. When the compression is good the temperature drops to normal and remains there unless some complication sets in. When the temperature remains high after several pneumothorax installations, it means the treatment in this particular case will be a failure. Rapid improvement in the cough is noted especially when a large cavity has been successfully compressed. While it is true that the best results are obtained by complete compression, partial collapse produces good results at times. Partial compression very often causes a disappearance of toxic symptoms, such as night sweats, cough and high temperature. The immediate results of pneumothorax are often almost miraculous. It will stop a bleeding lung, bring down a high fever, relieve the severe coughing spells and stop the dreaded night sweats. There is no doubt that it is an immediate life saver and often a life prolonger. Barlow has demonstrated that the good results of pneumothorax are not due to compression, as shown by the fact that tubercles develop without difficulty in airless organs, such as bones. Artificial pneumothorax aids in the formation of fibrosis only in so far as it brings about complete rest of the diseased tissue in which there is already a tendency towards fibrotic change.

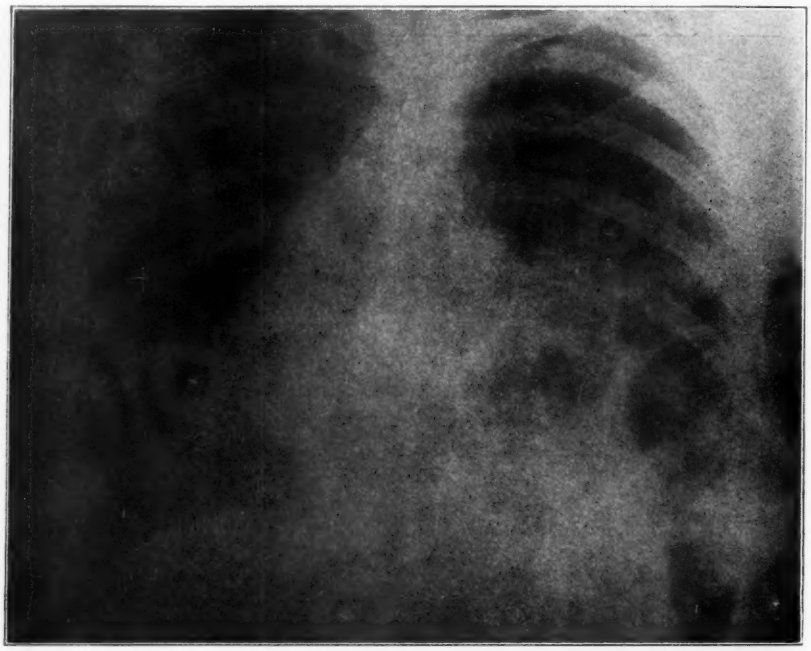

Fig. 4

Unusual type of collapse. (Right side.) The upper part of lung is collapsed while the lower part is held by adhesions. Evidence of cavitation near adhesions. In this case a phrenicotomy was done. This brought the diaphragm up and aided in collapsing the cavity.

If partial collapse of an entire lobe is effected, with each breath there is slightly less expansion of the tuberculous portion, and authors claim that after a few hours or days the diseased part will be seen to have appropriated to itself the greater part of the collapse of the entire lobe, the healthy portions expanding nearly or quite as well as before. In this manner we can readily explain the subsiding of toxic symptoms even when only a partial collapse has been accomplished.

If excessive intrapleural pressure is allowed, dypsnea will likely be troublesome. In a suc-

cessful pneumothorax there will be a gradual increase in weight and a return of the appetite to normal. If improvement fails to follow the induction of pneumothorax and the patient continues to run a high temperature, even though there may be improvement in the cough and expectoration, one should keep in mind the possibility of a shifting mediastinum, or displacement pneumothorax and abandon the treatment rest. A human being can live on much less than two-fifths of the normal breathing area in the lungs. Life may continue even when the greater part of the lung is destroyed.

J. R. Means and G. M. Balboni found that while the patient keeps at rest, respiration, gaseous exchange, carbon dioxide tension and the mechanical factors remain normal; thus patients with pneumothorax are dypsneic only on exer-

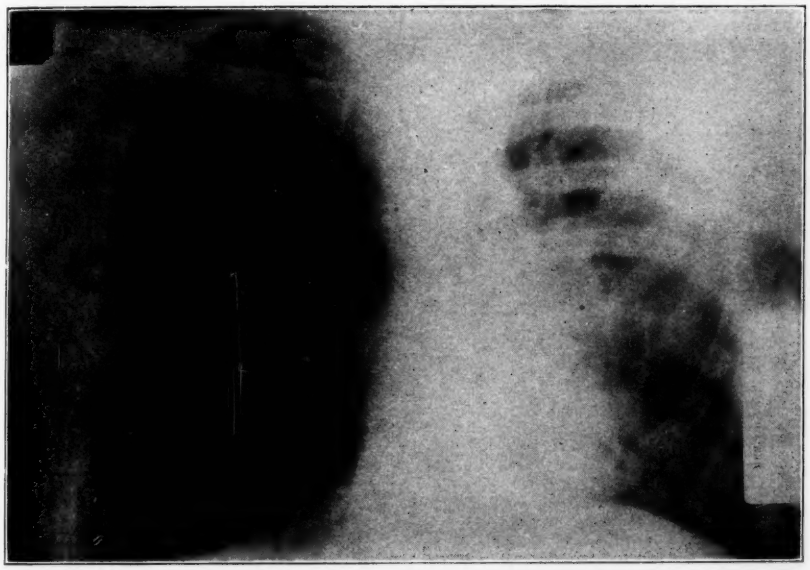

Fig. 5

High pressure pneumothorax. The heart is displaced into the right chest. No lung markings on left side visible. Patient dyspneic and it was found necessary to take several hundred cubic centimeters of air from collapsed chest in order to give him relief.

which has failed because of unfavorable conditions.

The most striking effect of pneumothorax in cases of hemoptysis besides the general improvement is the immediate cessation of bleeding, even after the first installation, and while the patient is in constant dread of a recurrence. If a collapse is successful, the hemoptysis stops at once. The air inflated acts like a tampon. In cases, however, where the adhesions are extensive, collapse is impossible and the more severe procedure of thoracoplasty must be resorted to in order to save the patient's life.

Rest is very important during treatment by pneumothorax. Results at times are unfavorable even in patients who respond well to artificial pneumothorax. The patient feels so well that he becomes careless and will not take the required tion. The ventilation of the blood is accomplished almost normally despite the fact that one lung is not being used.

In cases of adhesions of the lower lobe, phrenicotomy may be of considerable value in combination with artificial pneumothorax. It has been found that refills are less frequently necessary in cases of phrenicotomy.

Complications—Not all cases of artificial pneumothorax go through their period of treatment without complications. Symptoms may arise either during or after the operation. Pleural shock and air embolism may occur during the operation, but these complications are comparatively rare. In more than 2,000 inflations which I have given, I have seen but one case of air embolism; the symptoms were transitory in nature. Matson states that in 12,000 inflations

only four cases presented the symptom complex of gas embolism and pleural shock; two of these proved fatal. Pleural shock may be very mild or very severe in character. The cause is rather indefinite, although Saugman is inclined to attribute it to reflex spasm. Gas embolism on the other hand, is caused by air introduced into the circulation because of the entrance of the needle into one of the veins around an infiltrated area of lung tissue, or adhesions of the pleura. Air

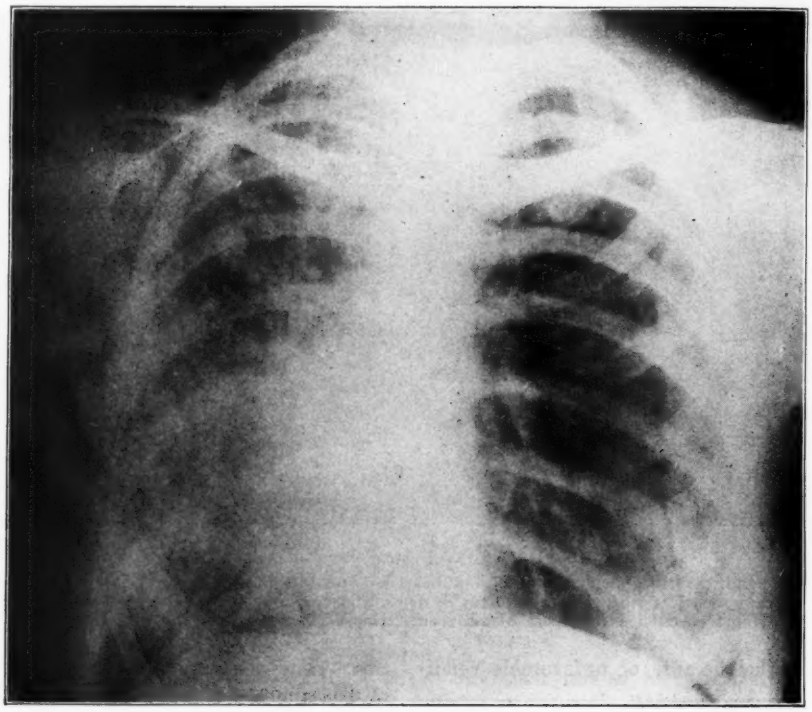

Fig. 6
Unilateral case. Left sided lesion with cavitation. High temperature and severe coughing present. Positive sputum. Very toxic.

embolism may be encountered either in the first operation or in refills. In the case cited above the complication of air embolism occurred during the fourth treatment. The symptoms of shock—cold clammy skin, imperceptible pulse, involuntary movement of the bladder and bowels, with aphasia were noted. The symptoms gradually subsided but for several weeks a slight speech defect, even perceptible to the patient herself, and slight paresis of the right side were noted; both disappeared entirely. When symptoms of collapse occur during a pneumothorax inflation, treatment must be promptly and energetically carried out. The use of cardiac stimulants and oxygen inhalation are of the utmost importance.

Exudate develops in a great many artificial pneumothorax cases. The presence of exudate facilitates the development of empyema. Many factors account for the formation of the exudate following pneumothorax treatment, such as loss of sodium calcium balance of the body. N. Lunde has found that following the administration of calcium in the form of calcium chloride 30, potassium acetate 60, and water 285—a teaspoonful several times daily—and as an adjunct, cod liver oil to increase the vitamines, he has noted fewer cases of exudate and the exudates that did occur would take a more favorable course.

Pleural effusion is a very common and rather serious complication which occurs often during pneumothorax treatment. Percentages vary from 10 to 70. Matson reports that in 83 out of 480 compression cases a serous exudate developed in amounts of 50 c.c. or more. Burrell states that pleural effusions form in nearly half of the cases. Erma Newer noted that in only three

out of 62 cases pleural effusion did not occur. In our series of cases 28 per cent. showed evidence of fluid during their pneumothorax treatment.

The fluid in the pleura may be very small in amount and difficult of diagnosis, or it may be large in amount and refill after each tapping. If small in amount it is generally transitory in character, lasting only from four to seven days without producing any untoward symptoms. A sudden elevation of temperature in a patient doing well under pneumothorax treatment often means the appearance of fluid. The temperature will gradually drop. The fluid will be found to be clear on aspiration but will become cloudy or pusy if a mixed infection sets in. Some authors maintain that effusion may have a very beneficial effect on the patient, first, by maintaining a good collapse and, second, by the production of antibodies. I am inclined to believe that pleural effusions are rather detrimental and that patients do better who do not develop this complication. It has been my practice in cases with pleural effusions to aspirate the fluid and replace it by air as advocated by Stivelman. This will prevent the formation of adhesions in many cases, although Fishberg believes that when adhesions begin to form they cannot be prevented by any known means.

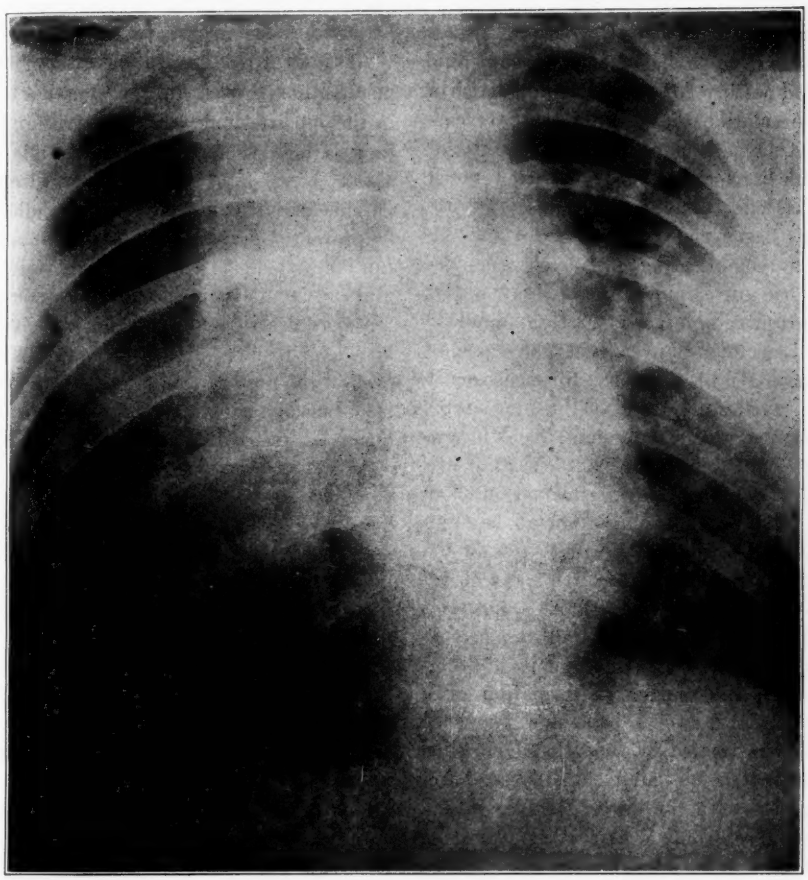

Fig. 7

Same case as Plate VI. Before appearance of fluid. Patient suddenly developed a high temperature during pneumothorax treatment. Pleural effusion was suspected but not found by x-ray.

The treatment of this condition depends entirely upon the symptoms found in each case. If there is absence of fever or dyspnea, a "hands

off" policy will produce the best results. It can readily be seen that mixed infections will invariably occur by frequent aspirations. However, when there is rapid accumulation of fluid, causing cardiac or respiratory embarrassment, the indications call for aspiration and replacing with air. The manometer should be one's guide as to how much air one is to replace. The pressure certainly ought to be around zero, in order to maintain an even intrapleural pressure. In one of my cases an average of 500 to 600 c.c. of fluid was aspirated weekly for several months with a rapid reaccumulation of the fluid. I have carried out the suggestion of injecting 10 c.c. of the fluid subcutaneously, but I have not noted any beneficial effects, nor do I believe that reabsorption is hastened by this method.

Pyothorax complicating artificial pneumothorax is very grave, and unfortunately occurs in a fair percentage of cases. Matson found 59 cases of tuberculous empyema in 480 cases of pneumothorax. In his opinion, empyema usually arises from tearing a portion of the lung cortex in the effort to separate adhesions, from ulceration of the superficial caseous focus into the pneumothorax cavity. With the formation of an empyema, the fever and emaciation go hand in hand. I have had several cases with pus in the chest cavity show no toxic symptoms and remain in good physical condition. This, however, is the exception and not the rule. The empyema must be aspirated in the presence of toxic symptoms, although the danger of formation of a fistulous tract is great. I have now two such cases. One was treated by the "closed" method of drainage, that is, an "air tight" tube and frequent irrigation with the Carrol-Dakin solution. In the second case only a fair sized aspirating needle was used and irrigation was done with a 2 per cent. solution of formalin and glycerine. Both cases developed fistulous tracts. Tube drainage is a measure to be used only as a last resort. In some instances the pus finds its way out through a bronchus and the patient drains it out, spitting large quantities of purulent material for months. This condition is rare. I have not observed any such case among our patients.

The possibility of the disease becoming active on the other side should always be kept in mind. Fortunately it does not occur very often. In Matson's series of 480 cases, 282 of the patients had demonstrable disease in the opposite lung; yet progression of the disease took place in only 35 cases during the actual period of pneumothorax treatment. Five cases in our series fall in the same category, that is, activity developed on the untreated side. In two of these cases I have attempted bilateral pneumothorax; one ended fatally and the second is making very little progress towards recovery.

At times it may become necessary to introduce pneumothorax even in the presence of disease in the opposite lung. If the disease in the better lung is not too active, it is advisable to put in a thin layer of gas in the more diseased lung. In this manner the formation of adhesions will be prevented and the effect on the opposite lung can be noted. This suggestion was made by Matson, but it is similar to the low pressure collapse as described by Barlow. It is true that beneficial results have been noted in these cases, even in the presence of active disease on the other side, but I am inclined to question their permanency. I am now doing a partial compression on a patient in the presence of active disease on the opposite side and the improvement is very marked. The rales on the better side have almost subsided and there has been an appreciable gain in weight and a lessening of the toxic symptoms. This patient is on limited exercise now and the laryngitis which was also present has about disappeared. Unfortunately such results are not encountered very often.

During pneumothorax treatment physical examinations and roentgenological control must be carried out frequently. My practice is to examine each patient by means of the fluoroscope before each treatment. In this manner a better check can be kept on the untreated lung and it is also an aid in determining the frequency of refills. Frequent filming should be resorted to, as the fluoroscope at times will not visualize fresh invasion of the disease. It is well to remember that occasionally densities will be noted in the better lung as a result of a shifting mediastinum. If this occurs, it is best to allow the lung to reexpand. If the markings are due to stasis they will disappear. With the appearance of active disease in the opposite lung, pneumothorax may have to be abandoned entirely. I have found it necessary to do this in nine cases under treat-

ment. In view of later observations, it might have been better if the collapse had been maintained cautiously. The possibility of arrest with pneumothorax, even with the disease on the opposite side, is better than without collapse.

Of the less frequent complications, spontaneous pneumothorax, emphysema and perforation of the lung may be mentioned. Spontaneous pneumothorax occurs either as a result of accidental puncture with the needle during pneumothorax treatment, or by the breaking of a cavity after the pleural layers are separated by inflation of pneumothorax complicated matters further. Severe cases of emphysema have been described in the literature, but none have been noted among our patients.

Perforation of the lung due to caseation and consequent thinning of the pleura has been mentioned before as a possible complication during pneumothorax treatment. Breaking of adhesions especially during severe coughing spells will often cause a rupture with the subsequent development of an empyema. Perforation of the lung will lead to an open pyopneumothorax. It

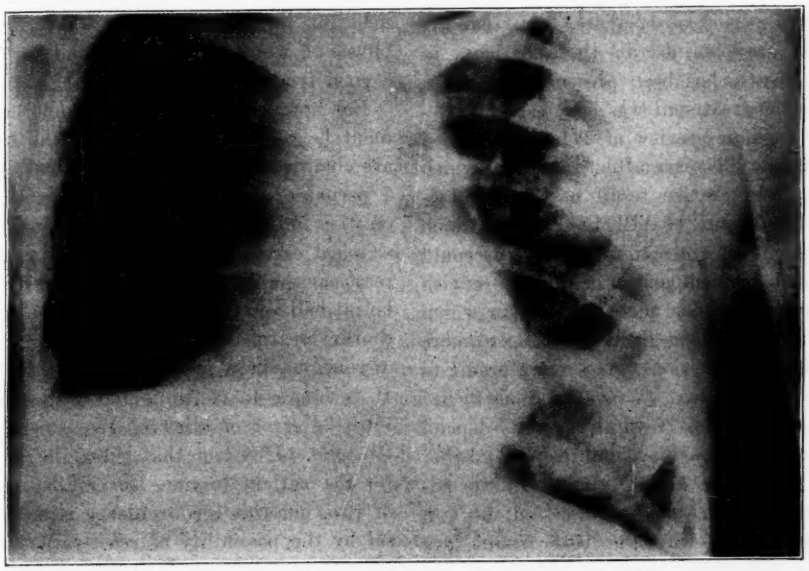

Fig. 8

Same case as Plates VI and VII. Collapsed left lung. Evidence of small amount of fluid. Heart slightly displaced to the right. General condition improved. Temperature normal. Cough subsided. Plate taken seven days after Plate VII.

air. W. Perry Morgan maintains that this complication is more common than is suspected. Fortunately it is not serious unless the contents of a cavity are emptied into the pleural space when pyopneumothorax will result. If air escapes along the needle tract into a subcutaneous tissue, emphysema is produced. I have seen one such case; the symptoms subsided within a few days and the patient did not complain of any distress. Fishberg states that when gas is given under high pressure this complication is observed frequently. In the case I saw the manometer reading was minus three at the end of the treatment. This patient continued under pneumothorax treatment for several months until a pyo- is doubtful whether this condition can ever be cleared up as reinfection takes place from the ruptured lung. One case of this type occurred in our series of cases. It is evident that this complication will not respond to medical treatment. A surgical collapse as advocated by Sauerbruch, Brauer, Hedbloom and others is the procedure of choice in the presence of emypema. Burnand reports the incidence of 14 perforations of the lung among 300 cases treated by artificial pneumothorax.

Ultimate Results—It is evident that the early cases are those in which the ultimate results of artificial pneumothorax are the best. Perhaps no better analysis of a series of cases can be offered

to substantiate this viewpoint than the report made by Blanchet in 200 cases. He observed these patients for a period of 10 years. Of the 100 belonging to the far advanced group, in a period of ten years, 97 were found dead and 3 living. Of this group only 15 per cent, received some benefit while in 85 per cent. little or no improvement could be noted. In the moderately advanced group in the same period, out of 100 patients 24 are dead, 6 failing or stationary, 23 decidedly improved; in 18 the disease is arrested and 29 of these patients are working.

Erma Newer in an analysis of 91 cases observed over a period of 12 years, finds that the best results are obtained in those patients in whom the disease has been present less than a year before the treatment was begun. J. Gravesen cites Saugman's review of 211 far advanced cases from 2 to 12 years after discharge, which shows a lasting positive result of the pneumothorax in 38 per cent. of ALL the cases in which a pneumothorax of any noteworthy extent could be established. A comparison of this figure with the 11 per cent. of the cures in cases in which pneumothorax had to be given up owing to more or less universal adhesions, gives more credit to artificial pneumothorax. When we come to understand that the most favorable results depend entirely upon a satisfactory compression and that adhesions, which are always present in the advanced case, prevent such compression, we can readily understand why the best results are obtained in the earlier cases of pulmonary tuberculosis. It is true that a number of startling arrests of the disease are found in cases of advanced tuberculosis, but the observation of all men in this work is that pneumothorax treatments should be given in early unilateral cases.

In the series under pneumothorax treatment at this Sanitarium extending over a period of four years, I find that approximately 24 per cent. were discharged as arrested. Many of these are working daily. Twenty-one per cent. are improved. The remaining 55 per cent. are still under treatment. Admitting that pneumothorax may bring on some unfavorable complications, as mentioned, the treatment will often effect a cure in otherwise hopeless instances and will give comfort and no doubt prolong life in many others. Fishberg has well said that no surgeon hesitates in performing gastrotomy for cancer of the stomach although he knows that in all probability the patient will not survive three months. Palliative gastro-enterostomies are performed with the confidence that the best is being done. Even if life is not saved, comparative comfort is given during the last days. But in a certain number of cases pneumothorax is more than palliative; it cures the disease and should be applied in all cases where other methods of treatment have been tried and found wanting.

New remedies appear from time to time, claiming curative properties in pulmonary tuberculosis. They are rapidly discarded. Artificial pneumothorax not only stays on, but a wider field for its employment has been found. No physician who has given artificial pneumothorax a good trial will do without it.

For how long should the pneumothorax treatment be continued? Doubtless the best results are obtained when the collapse is carried on over a period of from two to five years depending on the individual case. The patient must be watched carefully and if at any time symptoms reappear the indications are for reinflation. Forlanini believes that many cases require pneumothorax treatment indefinitely. It is unsafe to discontinue in a shorter period than one year. It is better to continue too long than to fall into the error of allowing reexpansion to occur too soon. It is true that it may be inconvenient for the patient to come for refills every month or two, but this inconvenience is more than offset by the possibility of reactivation of the disease if the treatment is stopped too early.

If pneumothorax is valuable in well advanced cases, it is certainly more valuable when properly employed early in the disease. In the unilateral cavity case without contraindication, it is unjust to the patient not to employ this procedure. If several months of intensive rest have produced no improvement, pneumothorax certainly should be considered.

THE ANNUAL HEALTH INVENTORY

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There are some people who, though modern in every other respect, live medically in the dark ages. When sick, they either employ no doctor or one of the several varieties of witch doctors or quacks, self-styled "healers," who never examine their patients and use one remedy for all ills and that mostly the wrong one. Many peo-

ple still live today in what will soon be called the medical middle ages. They resort to the physician's service only when they are sick. The duty of the medical profession in the modern world is now, and will consist much more in the future, in keeping people well, and one of the chief agencies of this service will be an annual "health inventory" for each and every person.

Communities have long since recognized the importance of disease prevention by the organization of health departments, which slowly but surely are exterminating communicable diseases from among us. A number of progressive organizations have, for years, established preventive medical service and found that it pays. But the rank and file of the people do not yet realize that the medical profession is able to render each individual an invaluable health conservation service that not only may extend the term of life by years, but also reduce the time spent in suffering and sickness; all this at the expenditure of but one or two hours' time each year and of a very moderate professional honorarium, and it is up to the physician to educate his clients in this direction.

Thrifty business men insist on annual inventories; banks on periodic audits; wise automobile owners have their cars examined at intervals, so as to keep them in service; but even these same people are generally not yet aware of the fact that they owe their body at least as much care as their property.

What, patients will ask, can periodic examinations do for us? To answer this question exhaustively would take us much beyond the confines of the available space; merely the more obvious results can be touched upon here. Lack of proper examination keeps millions of human eyes in a crippled condition, lessening to an incalculable degree human efficiency and happiness, for eye strain causes fatigue, which in turn produces irritability, pessimism, "nervousness," and this leads to social maladjustment with its train of human misery. People, who are in need of refraction of the eye, often delude themselves with the idea that they can see well enough. They do not realize that they do so at the expense of constant action and consequent fatigue of the delicate muscles of accommodation. Large numbers of people do not hear well, simply because their ears are stopped up with wax. Limitation in the capacity of the nose, often easily remediable, causing deficient air intake, leads to involuntary curtailment of activity and consequent lessening in accomplishment and success in life. Has any mouth-breather ever become world-famous or conspicuously successful?

Enough has perhaps been said about the necessity of semi-annual inspection of the teeth to render further comment on this topic superfluous at this time. But, if the teeth should be examined twice a year—and this is emphatically granted—should not the rest of the body be given the benefit of an examination at least once a year?

Finding thyroid enlargement, with or without tendency to hyper-activity of the gland, may prevent development of serious disease in the future.

Enlarged lymph glands may lead to the discovery of a hidden infection, pallor to an unobserved loss of blood, slight puffiness of eyelids or ankles to one of the causes of edema.

Poor muscle tone, defective chest development, faulty posture, flat foot, found early enough, can be corrected without much difficulty by appropriate exercises.

Tuberculosis, discovered early, is curable; neglected, it is fatal. The early recognition of abnormalities of the heart, of tendency to high blood pressure, to Bright's disease or to diabetes mellitus may result in a prolongation of life to one of nearly normal expectancy.

Foci of infection can be detected and taken care of before they produce disease; thus, justifying the health examination slogan, "Get the disease before it gets you."

For an examination to accomplish all this and much more, it must be made in a thorough and competent manner. To have the urine merely examined annually, as is advocated by so-called "Life Extension Bureau," is a little better than nothing, but it covers hardly 5 per cent, of the examination really necessary.

There are some people who hesitate to have a medical examination for fear the doctor will find something wrong with them, and thus disturb their sense of security. That this is a policy as unwise as the ostrich's traditional "burying the head in the sand" in the face of danger, needs hardly be pointed out. As a matter of fact, these examinations discover our degree of health, and any one must feel immeasurably more secure to know there is nothing wrong with him or to know just what is defective, than to be in doubt

and fear that there might be something seriously wrong. Indeed it is the best thing that can happen to us to have the weak points of our system discovered, so as to enable us to strengthen them if we can, or to ward off atacks upon them if they cannot be fortified.

At the conclusion of the examination, it is the physician's duty and privilege to give his client suggestions for the improvement of his physical or psychic condition, and the mode of life that will fit his individual case. Obviously, a person who is underweight will need an entirely different regimen from that of the person who is overweight, and both of these conditions—be it understood—can as a rule be easily corrected before they have become extreme. Here as elsewhere a moderate departure from the normal is unproportionately more easily corrected than great deviation.

Not only should the physician give our body a thorough overhauling and checking up at this time, as a mechanic does for an automobile, but he should also—to carry the homely simile a step farther—instruct the driver in the art of driving his machine most efficiently. Overwork and lack of engrossing occupation, too much pleasure and not enough diversion, excessive indulgence in stimulants, unwise balance of diet—all these errors and many others—should be discovered in the course of such an examination and appropriate suggestions given to correct them. This is a good opportunity also for sober advice on sex-hygiene and morality. Indeed, the prescription for the health client will consist much more generally in modification of hygiene rather than in the giving of drugs.

To accomplish the results aimed at, these examinations must be complete, more painstaking indeed and thorough than the usual "office" examination of a patient complaining of some ailment. In the latter case both the physician and the patient are generally satisfied if the examination and advice confines itself to the particular organ or system complained of. The "health inventory" cannot afford to slight any part of the body, for "in medicine more mistakes are made by not looking than by not knowing." To discover symptoms or signs of beginning disease obviously requires a sharper lookout than to merely find it after it has become definitely established. Hence these examinations are very time consuming, and the physician should not be asked to make them without previous appointment, so as to enable him to set the necessary time apart for the purpose. For the same reason, these examinations will require a somewhat higher honorarium than that generally paid for the ordinary examination.

The records of the examinations, or a copy of them, should, in the author's opinion, be in the hands of the individual to whom they refer. Properly made and collected, these results of periodic examinations might become in the course of time an invaluable possession, most especially when sickness comes. They might then enable a physician, previously unacquainted with the patient, to obtain almost that insight into the person's "constitution" that is such an important asset to the family physician. These records might, indeed, become treasured heirlooms, in that they might reveal hereditary tendencies to disease and suggest means of circumventing these. They might also in time to come furnish the basis for a rational development of eugenics.

Does it not seem, therefore, that we ought to add to the old adage, "An ounce of prevention is worth a pound of cure," the maxim: "An hour's examination while we are well is better than days of treatment when we are sick"?

CARCINOMA OF THE COLON, A STUDY OF SIXTY PROVED CASES*

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The early diagnosis of carcinoma of the colon is of great importance because metastasis is a comparatively late occurrence in many instances. This is especially true of the scirrhus form which occurs most often in the sigmoid (L. Galliard[2]) but even the more frequent cylindrical cell carcinoma offers good prospects of cure after radical removal because distinct obstruction often precedes metastasis by a considerable length of time (Kaufmann[3], A. Schmidt[4], E. W. Allin[1]).

These features induced us to make a study of sixty cases of proved carcinoma of the colon in order to discern the manifestations which may

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enable us to make an earlier diagnosis and thus to improve the prognosis by timely operation.

The first point we studied was the incidence according to age and sex. We found that 33 cases or 55 per cent occurred between the ages of 40 and 60 and that 20 or 33 per cent occurred in patients 60 years of age or older. An important finding was that three patients were under 30 years of age; one being 23, one 26 and another 27 years old. We thus see that carcinoma of the colon occurred most frequently between the ages of 40 and 60 but we must not lose sight of the fact that this disease may attack the young as well as those in the so-called cancer age.

A marked predominance in the male sex was also apparent; there being 42 males and only 18 females in this series. The greater incidence in males appears to coincide with the accepted statement that carcinoma of the gastro-intestinal tract is more common in males than in females and this point may be of some value in the differential diagnosis of conditions in the two sexes which may produce pain in the abdomen or signs of intestinal obstruction.

An analysis of the manner of onset shows that the clinical manifestations began gradually in two-thirds of the cases and that the average duration before admission to the hospital was about nine months. Five of the patients stated that their symptoms had existed two years before admission to the hospital. A consideration of these features makes us pause when we take into account the comparatively long time the condition was not recognized and again emphasizes the need for more prompt diagnosis in a disease which gives such distinct warning and for so long a period of time. On the other hand, a sudden onset, usually with the signs of acute intestinal obstruction was present in 19 cases or in nearly one-third of the entire series. A consideration of this point leads us to conclude that the lesion, with a considerable degree of narrowing, must have been present in these instances for some length of time without producing clinical manifestations until spasm or plugging of the narrowed channel with hardened feces or coarse residue occurred. The difficulty of recognizing carcinoma of the colon in the earlier stages thus becomes apparent when we dwell on the fact that one-third of the patients with more or less advanced carcinoma of the bowel for a long time presented no symptoms referable to such a condition.

A study of the symptoms and signs which our patients presented was next undertaken and it was found that the presence of a tumor mass in the abdomen was probably the most certain single sign and that it was second in diagnostic value to exploratory operation. Unfortunately a mass was found in only 25 cases or in less than one-half of the series but we also learned that this sign, when present, is evidence that the condition is already inoperable. It is a mistake, therefore, to wait for this sign as valuable time may be lost and the mass, even when very large, may be inaccessible to palpation if it is located at the flexures under the ribs. The discovery of a tumor may be facilitated if hard feces or coarse intestinal contents accumulate just proximal to the carcinoma either as a result of actual constriction or spasm, thus exaggerating the size of the tumor.

Of almost equal diagnostic value is evidence of more or less permanent obstruction, and persistent constipation may be the first symptom to draw our attention to the possibility of carcinoma of the bowel. Constipation was present in 42 cases or in 70 per cent but was masked with alternating diarrhea in 12 instances or in 20 per cent. Diarrhea alone was present in six cases and can be explained by irritation of the bowel either above or below the lesion. From the foregoing it is evident that constipation or other disturbance of the bowel function, even diarrhea, in an individual of the carcinoma age should awaken our attenion to the possibility of malignancy of the colon especially if the patient has not previously had such a disturbance of the bowel function. The more definite evidence of obstruction such as meteorism or visible peristalsis were observed in a large number of instances but must be regarded as evidences of obstruction which has already existed for some time and can hardly be considered an early sign.

The presence of blood in the stools, especially if found on repeated examinations is always of great importance. Occult blood in the stools was found in 21 cases or in slightly more than one-third of our series. None was found in nine instances and no examination for blood was made in 30 cases of which latter 19 were admitted with signs of acute obstruction and immediate operation was performed. The importance of finding

occult blood in the stools cannot be over estimated even though we failed to find it in nine instances, in one of which the stools were examined for 16 consecutive days. We must conclude, however, that while the presence of occult blood in the stools is a most valuable sign of carcinoma, the absence of this sign by no means excludes the possibility of such a condition existing in the bowel.

Vomiting was a symptom frequently complained of and was present in 31 cases or in about one-half. Nothing distinctive was noted about this vomiting and it occurred at various times, but fecal vomiting was never observed. Pain was complained of in about three-fourths of the cases and while there was nothing distinctive as to the character, location, relation to meals or bowel movement, this sign is of considerable value when it occurs and persists either constantly or periodically in an older person when no definite cause can be found to account for this pain. It has frequently been our experience that vague, crampy pain in the abdomen for which no definite cause could be determined eventually was found to be caused by carcinoma of the colon.

A study of the location of the carcinoma showed that 31 were in the sigmoid, 12 in the cecum, eight in the ascending colon, five in the splenic flexure, three in the transverse colon and one at the hepatic flexure. The fact that one-half of the cases were carcinoma of the sigmoid brings forward the hope than an earlier diagnosis may be looked for if sigmoidoscopy is more commonly employed as the lower bowel may be visualized for a distance of 35 cm from the anus with this method.

An absolute essential in the diagnosis of disease of the colon is roentgenological examination. The examination is best performed with the barium enema but valuable information may also be obtained by study of a barium meal 24 hours after ingestion. The latter method not only may show filling defects but may also show the proximal site of the lesions. There are two important roentgenological signs which are almost pathognomonic of malignancy of the colon. One is evidence of obstruction to the barium meal or enema with the presence of a palpable mass at this site; the other is a filling defect within the lumen of the bowel which is constant, ragged edged and associated with a palpable mass at the site. Dilatation and accumulation of gas in the bowel proximal to the lesion and fixation of the affected segment of the colon are important findings which may also be present. A common type of filling defect is that caused by an annular scirrhus carcinoma which gives rise to a localized, narrow, more or less smooth, persistent, ring like deformity. This napkin-ring deformity may easily be overlooked or confused with spasm.

There are instances of carcinoma in the lower bowel which do not lend themselves to accurate roentgenological examination and this is most commonly the case in lesions of the lower sigmoid and upper rectum due to the fact that the bowel in these regions cannot be readily manipulated and that the enema tube may pass beyond the mass allowing the segment of bowel to fill proximally. These comparatively few instances in which the information obtained may be erroneous do not detract any from the value of roentgenological examination in suspected disease of the colon and this measure should be employed where more information is desired than can be obtained by the history and physical examination.

The treatment of carcinoma of the colon is surgical unless the condition is already manifestly inoperable and a colostomy of no further value. There are few cases which should not have at least a palliative colostomy and these few are those which cannot stand the shock of such an operation. The method of operation depends on whether obstruction does or does not exist at the time the diagnosis is made. The most conservative operation when acute or severe obstruction exists is a simple colostomy and when the site of the obstruction cannot be localized cecostomy is the operation of choice. The latter has the further advantage that a clear field is provided for a future operation should such a step seem advisable. Radical removal by the method of Mikulicz was used when the diagnosis was made but where there was no acute obstruction. The operation was performed in three stages. The first stage consisted of a simple colostomy during which time the liver was examined for evidence of metastasis and the entire field inspected to determine if the condition were still operable. The patient is allowed to rest for a few weeks during which time his general condition is improved and then the second step is performed. This consists of a mobilization of the

colon with resection of the mass and union by lateral anastamosis. End to end anastomosis may be used in the transverse colon or sigmoid. If the general condition of the patient is good and there are no evidences of obstruction a Mikulicz operation may be performed without a preliminary colostomy.

Resume:

1. A study of sixty proved cases of carcinoma of the colon was undertaken in an attempt to determine the earlier manifestations of the disease as metastasis is a comparatively late manifestation and early operation should offer very good prospects of complete cure.

2. While most of the patients were in the so-called cancer age there were three who were in the early twenties. More than two-thirds of the cases were in males.

3. The onset was gradual in about two-thirds and sudden in one-third of the cases. The latter group emphasizes the difficulty in diagnosis as the lesion must have existed for a considerable length of time without symptoms before there were signs of acute obstruction.

4. The most valuable single sign is the presence of a mass but this is also evidence that the condition is probably already inoperable. Disturbance in bowel function is of great significance, especially if occurring for the first time in a patient of advanced age. The disturbance may be either as constipation or diarrhea.

5. Occult blood in the stool is a valuable sign but its absence in no way rules out the possibility of carcinoma of the bowel.

6. Sigmoidoscopy may help in the diagnosis of this condition as one-half of the cases occurred in the sigmoid, a region accessible to the eye by aid of a sigmoidoscope.

7. Roentgenological examination is often of great value except in cases where the lesion is in the lower part of the sigmoid or upper portion of the rectum.

8. Radical removal is the method of choice and a colostomy is made a short time before resection is performed in order to build up the strength of the patient.

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OPERABILITY OF CANCER OF THE RECTUM

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There is no problem in the practice of medicine upon which the profession is more divided than the relative weight to be given each symptom or physical finding when determining the course of treatment of a cancer of the rectum.

Rectal carcinoma remains localized for a long while and this fact would make its radical removal a very hopeful undertaking if the growth were discovered promptly.

Epithelioma at the anus extends by continuity through the skin to the scrotum, vulva, vagina and up into the rectum. The inguinal glands are involved and also the middle hemorrhoidal system through which abscesses of the ischio-rectal fossa arise. Within the rectum cancer extends to the contiguous genito-urinary organs and backward to the coccyx. The retro-rectal and hypogastric glands are involved.

Digital examination is of great value in all rectal strictures, and in the case of cancer it is absolutely necessary, because here a diagnosis often can be made by this procedure alone.

Cancer of the rectum is but rarely located solely on the anterior wall of the rectum; the ulceration usually spreads around the lateral walls. The tumor generally forms a raised patch. The finger tip bumps against the lower edge and the induration of the base produces a decidedly characteristic sensation, and the finger can feel a crater-like depression. Almost always the slightest touch is extremely painful and exaggerates the tenesmus present. The finger, when removed, is covered with purulent matter and some blood if the cancer is ulcerating. A short finger may not reach a cancer located high up; however, by crowding in the anal sphincter, and pushing down the suprapubic region (the recto-abdominal bimanual examination), if the patient is thin, the lower limit of the growth may be reached. Perhaps a hard nodular mass will be disclosed if it involves only one side of the rectum, while the other side is covered with normal mucous membrane; or the mass may encompass the rectum, leaving only a small opening in the middle. Its peculiar character, as dis-

closed by palpation, namely, the hard, rough, irregular mass projecting into the rectum, easily differentiates it from simple stricture which later is smooth, or from a tuberculous stricture, which undermines the surrounding areas.

Scirrhus.—The commonest form of cancer in the rectum is the scirrhus. This usually occurs just above the internal sphincter or in the ampulla of the rectum. It begins more frequently on the anterior wall of the rectum, although it may occur elsewhere. It starts as a hard nodular mass and extends circularly until it involves the rectum all around, leaving only a small opening in the middle. The latter condition is the usual one found when the physician is consulted. Mickulicz found three-fourths of his cases progressed to this stage. Gussenbauer estimates that 65 per cent. of all rectal cancers are of this variety. These cancers grow lengthwise of the gut but very slowly and rarely involve more than two inches.

The encephaloid cancer occurs as a soft polypoid mass very like a benign adenoma, but has a broad base that pervades the submucous tissue. This variety constitutes 15 per cent. of the rectal cancers. They break down very early and with few exceptions have reached this ulcerative stage by the time they are seen by the physician. Palpation suggests a feeling as if irregular masses had been broken off roughly. Raised edges surround the ulcer and give it its crater-like appearance. The well annointed finger, when inserted, feels this rough, irregular edge all around the constriction, and then suddenly passes into a wider channel above where frequently masses of hardened feces are found. Exceptionally, a soft polypoid mass is found.

Every possible care must be exercised in passing the finger through the obstruction where it surrounds the rectum, especially if near the peritoneal surfaces, for fear of tearing through the friable wall and entering the abdominal cavity. The necrosis may leave a very thin partition at some one point or the ulceration in the gut above the obstruction may be very deep. The finger must never be pushed hurriedly through a carcinomatous stricture, and even soft bougies must be managed with great caution. Rupture and sudden death have resulted from carelessness in making such an examination.

Cancers high in the rectum and in the sigmoid colon are the most difficult to diagnose and have repeatedly been mistaken for a diseased ovary, salpingitis or other pelvic tumor. The rectoscope is valuable, but even this instrument does not inform us as to the upward extent of the neoplasm, its depth and the extent of the sloughing. Hence, a thorough roentgen examination is indispensable. A proctoscopic examination so excites the rectal mucosa that a patient may have difficulty in retaining an enema during the next several hours, consequently, a roentgen examination should not be attempted within twenty-four hours after the use of the proctoscope.

Preparing the patient for a roentgen examination consists in emptying the colon, by giving an ounce of castor oil on the evening before the examination and a cleansing enema shortly before the examination.

A roentgen examination for carcinoma of the terminal gut, as made by an expert presents very definitely and distinctly the filling defects by a barium mixture. The patient should be examined with the screen, and x-ray negatives should also be taken, in order to determine accurately the condition and location of the lesion. By such a carefully interpreted x-ray examination, very few cancers of the pelvic bowel can escape diagnosis, while, at the same time, undue importance will not be given trivial deviations from the normal.

The pelvic bowel may be examined after a barium meal by mouth or as given per enema, or both. The clyster is the more frequently used and in the study of obstruction of the bowel, the clinician will gain valuable evidence when watching the inflowing enema. The patient lies on his back on the screen table and the opaque mixture fills the rectal ampulla. The sigmoid flexure and the rest of the colon fill irregularly; and at this time, palpatory manipulation is employed. The patient's abdomen must be relaxed, his thighs being flexed, and he should breathe through his mouth. The tube and the screen may be shifted during the examination, so as the better to observe particular regions. Turning the patient by changing the angle of the ray also will help in the study of kinks and angulations.

There are wide variations in what must be considered pictures of the normal terminal gut, that is to say, where junction is normal and

there is no visual lesion in the normal rectum. The descending colon usually narrows somewhat at the sigmoid flexure and expands again at the ampulla, then tapers toward the anus.

The most important sign of the x-ray picture of the pelvic bowel is the filling in of defects in the contour of the bowel because such change from the normal outline may be owing to spasm of the colon, to feces, intestinal gas, adhesions, extrinsic pressure on the intestine or tumor growth. In cancer, this irregularity may be sharply outlined or definitely shaded.

In the colon, obstruction other than cancerous is very rare. The filling defect shows the proximal limits of the disease. This deformity of the outline of the intestine may show a concentric local narrowing of the lumen, or it may be limited to one side. Even after a tumor has been found, we have to differentiate diverticulitis, tuberculosis, actinomycosis, syphilis and benign tumors within the colon. Spastic contractures of the sigmoid colon show as small irregular haustra.

Case 1—About one year ago, the patient began to suffer pain in the pelvis and rectum and to bleed from the anus. Later, he was operated upon for hemorrhoids, but without getting relief. He admitted losing weight, but thought that might be because of his worrying and his disturbed digestion. Combined digital examination disclosed a large mass in the pelvis. An x-ray photo shows cancerous involvement of the entire sigmoid colon.

Case C-3—The patient, a woman, noticed constipation coming on for about two years. She lost 70 pounds in weight. Has no pain, but rather a heavy, bearing-down feeling in the left pelvis. Has to keep the bowel contents liquid so as to have evacuations. Has a yellow fecal discharge from the vagina. Examination discloses a large mass in the pelvis and a rectovaginal fistula at the site of the growth. The fistula will admit a thin pencil. Semi-solid feces were forced out during examination. The x-ray photo reveals a marked annular constriction of the rectum.

Case 3—Inoperable cancer of the rectum with almost complete obstruction of the rectum. Six months previously, the patient experienced difficulty in having bowel movements. Cathartics caused colic and a feeling of soreness and obstruction in the pelvis. "The stool does not seem to be able to get out." The patient was having obstructive symptoms at the time this examination was made. Laparotomy was performed and the rectum was found well matted down to everything. Colostomy through the left rectus was performed, using that muscle as a sphincter for the newly formed anus.

Case 15—About a year ago the woman noticed a protrusion at the anus (said to have been a hemorrhoid) which disappeared under treatment by her physician. For the last six months, she has lost blood from the anus. Has lost 37 pounds, has had no formed feces for the past two months. She has liquid stools by taking epsom salts.

Inspection of the anus reveals nothing. By digital examination, the finger meets, 1½ inches up within the rectum, a firm and hard resistance, through which there is a very small passage. The finger cannot be introduced. Vaginally, the tumor is found fixed to the uterus. Bimanually, an index finger in the rectum and a hand above the pubes reveals a mass almost filling the pelvis. The picture shows the tumor with filling defects in the lower rectum, a widening at the ampulla and another almost complete stricture at the junction of the rectum and sigmoid colon.

Case C-19—For the past seven years this patient has occasionally had pain in the rectum. Several months ago he had a boil which ruptured and still is draining. At times, he has considerable pain in the rectum, while, at other times, he is free from pain. One and one-half inches within the rectum, there is felt a firm nodular constriction which mats the structures together. An x-ray photo shows a stricture of the lower rectum.

THE ANTITOXIN FALLACY

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George Bernard Shaw is fond of saying, "If you do not say a thing in an irritating way, you may as well not say it at all, because people will not trouble themselves about anything that does not trouble them." Though this attitude does not generally prevail in the discussion of scientific medical topics, it may occasionally prove the only alternative forced upon us by an emergency. Such an emergency is the untimely and preventable death of those 10,000 children that still die annually in the United States of diphtheria. It is true that the percentage of deaths from this disease has decreased in the last few years, but it is also true that this decrease in mortality is not due to better treatment but to improved hygienic conditions and preventive measures. The treatment itself has remained practically the same ever since Behring brought about the great reduction in the death rate of diphtheritic children by the introduction of his antidiphtheritic serum.

Thus our inability to save more children through more advanced clinical efforts can not be blamed to a therapeutic impossibility of a further reduction in the mortality rate, as I have shown this to be possible by finding and adminis-

tering the necessary complement[1]. It must be blamed entirely to the antitoxin theory and its devotees, who consider an attack upon this theory as heresy and stubbornly refuse to listen to any arguments against it.

To save these needlessly dying American children two ways are open upon which to progress. The first way is to continue scientific argumentation in the parliamentary, old-fashioned style by bringing more and more proofs against the silly antitoxin theory with the prospects that, as experience has taught, only after years of incessant labor the antitoxin fancy is gradually uprooted and overthrown. In this instance, however, how can we assuage our guilty conscience knowing that this endless procession of doomed children could be stopped if we would but discard the antitoxin theory and adopt the proper line of treatment?

The second way is to force an unwilling attention and to compel a general discussion of the antitoxin theory by placing the responsibility individually, and, following the advice of Shaw, by using such language as will hurt and hurt so much that the antitoxinists, the friends and supporters of the antitoxin theory are forced into the open and either defend their theory or drop it. In both instances its doom is sure.

There seems to be no choice. Patience and forbearance with antitoxinists spells death and destruction to thousands upon thousands of American children annually. If, therefore, some seemingly harsh words or sentences are used in this treatise, let it be understood that they are prompted by sheer necessity in order to force an issue in the interest of those victimized children whose gloomy graves stand out as a mute reproach of the utter therapeutic helplessness into which the antitoxin theory has engulfed us.

To bring the proofs necessary to support these statements, let us disentangle facts from fancies by dissecting point after point, using common sense principally and adducing as proofs only facts that can be substantiated by clinical or laboratory evidence.

Facts and Fancies Concerning Antitoxins.—Antitoxins is the name given to bodies which appear in the blood of man and higher animals if certain specific antigens are injected or enter the body in the form of pathogenic micro-organisms.

Experimental and clinical facts, interpreted in the light of the scant knowledge on immunity processes as it existed a score or more of years ago, seemed to suggest that these bodies serve the purpose of neutralizing the toxic substances formed in the body during the course of infectious diseases. Hence the name "antitoxins." The infinitely better and vastly extended knowledge acquired during the years that followed and the innumerable biological facts flatly contradicting this theory that gradually came to light were not sufficient to cause a revision of the old-time deception. It still exists today in the same form in which it was originated. As proof thereof may serve a statement made by Simon Flexner,[2] of New York, who says that "antitoxic serums act not directly on the infecting bacilli, but on their liberated toxins which they neutralize, after which the body readily rids itself of the bacilli themselves." The authoritative weight of his opinion may be taken from the fact that his article heads a series of papers on "Biologic Therapy," which has been authorized and initiated by the Council on Pharmacy and Chemistry and was published under its direct auspices in the *Journal A. M. A.*—a series that has been republished later on in pamphlet form as "a guide for physicians."

The opinion expressed by Flexner is seemingly supported by the experimental finding that diphtheria bacilli grow luxuriantly upon a medium containing antitoxic serum, that is, great numbers of antitoxins. Commenting on this experiment in an editorial of the Journal[3], Simons lightly concludes that "the fact that diphtheria organisms grow luxuriantly in antitoxins speaks against any germicidal virtue." Never has a more misleading statement beguiled the readers of the Journal. On the surface, it is true, this conclusion may seem warranted. On due consideration, however, we readily find that the reverse is true, namely, that antitoxins have germicidal virtue[4]. Simons regretfully ignores the well known fact that antitoxins, in order to be able to kill micro-organisms, must have complement. Without complement, they are absolutely inert and represent just so much food for the bacilli to live upon, as shown in the experiment.

That diphtheria bacilli grow luxuriantly in antitoxic serum, which contains no complement[5] is, therefore, no proof that the antitoxins have no germicidal virtue. To test their germicidal power, we must bring them into conditions where they can find the necessary complement. This

can be done by injecting them into healthy animals, where complement is naturally always present. Their action upon the bacilli is, then, swift and unmistakable.

Experiments to this effect have frequently been reported in literature. Of the many at our disposal only three shall be mentioned, one actually being sufficient to prove our point.

1. Opitz[6] tells us that guinea pigs, if injected with antidiphtheritic serum, show no symptoms upon the inoculation of quantities of diphtheria bacilli many times surpassing the lethal dose.

2. Pawson and Redowitz[7] report that the small dose of 1½ to 2 units of antitoxin injected simultaneously with large doses of virulent diphtheria cultures protect guinea pigs against all ill effects.

3. Pico[8] warded off the fatal outcome in animals injected with lethal doses of living diphtheria bacilli by injecting simultaneously a mixture containing antitoxins, while all the controll animals died.

If biological experiments mean anything at all, those cited above offer conclusive proof that Simons is wrong in his conclusion, and that, in spite of Flexner, antitoxins do kill their respective organisms, whenever and wherever they meet them, provided the necessary complement is at their disposal.

After all, however, these proofs are not really necessary, though valuable and convincing they may be as collateral evidence. The fact that antitoxic sera are successfully used for immunizing purposes is all that is needed to furnish overwhelming proof of their germicidal virtue. We need just ask ourselves what the concept "immunity" implies. So far as I can see, it means that the immune body is able to ward off disease by killing the respective organisms immediately after settling. In other words, immunity is always bactericidal. The assumption of an "antitoxic" immunity is a fancy too silly to be discussed here. With the proof furnished that antitoxins do kill their respective organisms, it is no longer needed and must necessarily be abandoned together with the antitoxin theory. If I am wrong, and if Flexner, Simons and the members of the Council on Pharmacy and Chemistry have any other explanation in conformity with the antitoxin theory, it is earnestly hoped that they will not shirk their plain duty to enlighten us.

That the existence of immunity is intimately connected with the antitoxins is proven by the well-known experience that in passive cases immunity continues only so long as the injected antitoxins remain intact and ceases as soon as they are destroyed by the host. What, then, is their mode of action, if they are not germicidal? What, furthermore, kills in successful clinical cases the massive cultures in the throat of the diphtheritic child so suddenly after the injection of the antitoxins, if these "do not act directly upon the infecting bacilli?" That "the body readily rids itself of the bacilli themselves" after the neutralization of the toxins, as Flexner states, is, of course, but empty, flippant talk, not supported by any evidence. It appeals to the same non-existing fanciful power that is invoked by those who lay on hands or heal by prayers or absent treatments. If the body had any such mysterious germ-killing agency, independent of the antitoxins, why could it not rid itself of the few bacilli that started the disease at a time it was not as yet weakened by disease and toxins did not as yet exist? These are pertinent questions to be answered by Flexner. If he will not, or can not, answer them, the full responsibility to reply adequately falls upon Simons and the members of the Council on Pharmacy and Chemistry, who selected him and back him up. They should not, and can not without inviting the most dreadful consequences, shirk this responsibility. Life or death of tens of thousands of our American children annually depends upon their attitude, either proving their assertions or admitting their mistakes.

Facts and Fancies Concerning Toxins.—The difficulties met with in disentangling facts from fancies during the preceding analysis of the antitoxins are greatly augmented when it comes to toxins. This is due by no means to any lack of concrete information regarding these toxic bodies. An enormous amount of zealous work has been devoted to their study—and with gratifying results. But, as in the case of antitoxins, the facts evolved do not fit into the frame of the antitoxin theory and are, therefore, simply ignored. So it happens that also here the crude and antiquated ideas, originated some twenty or more years ago and based upon the superficial knowledge of that time, are handed out still today, undiluted by our newer and better knowledge. In support thereof another quotation is taken from the *Journal A. M. A.* and is presented here as a basis for the now following characterization of the toxins. It comes from an article furnished by the Dicks. Summarizing former work[9] they say: "We were

able to show that the hemolytic streptococcus growing in the throat produces a soluble toxin which is absorbed into the blood stream and causes the characteristic symptoms of scarlet fever, including the rash." Thus, first, and above all, they inform us that toxins are "produced by the streptococcus growing in the throat," or, in other words, that they are produced by living organisms. This concept of the origin of toxins from living micro-organisms is one of the main pillars upon which the antitoxin theory rests. It is, therefore, of great importance for our purpose to scrutinize more closely the way toxins are originated.

In doing so we find that toxins, if produced by, or liberated from, living organisms, can only be one of two things; they can be either an excretion or a secretion.

In viewing both possibilities, let us assume, first, that toxins are an excretion, that is, a waste product. The well known fact, however, that toxins, when injected, produce immunity against their parent organisms, militates against this assumption. Specific immunity can not be developed unless the cells of the host come into contact with the respective specific antigen. Consequently, toxins must contain specific antigen, that is, they must contain the body substance specific for the organisms from which they come. To build up specific body substance is, however, a laborious, and even vital, task for any organism, as it needs this substance for growth and multiplication. To waste it by excretion in the form of toxins would be as insane as if a merchant, after working industriously and diligently to make money, would throw it out of the window when made. But Nature is no such foolish waster. We must, therefore, take it as granted that toxins can not, possibly, be an excretion.

There is left but the other alternative, namely, that toxins are a secretion, that is, that they are "produced" or "liberated" for a purpose. But what could this purpose be? In spite of much deliberation and thought spent on this subpect, I am utterly unable to make even the faintest suggestion. We must and do, therefore, turn again to the antitoxinists for an answer. But while I can see no reason why micro-organisms should secrete toxins, I can see a most important reason why they should not secrete toxins. As stated above, the injection of toxins leads to immunity. In other words, toxins give the host the weapon to subdue and kill the microbes. Thus, toxins produce, so to speak, the rope with which to hang the microbes and their secretion would be an act of suicide. The scores of thousands of deaths annually from infectious diseases show, however, clearly that pathogenic microbes are not endowed with suicidal tendencies, so that the assumption that toxins are secreted can also be dismissed as belonging to the realm of impossibilities.

Besides those cited, there are other proofs showing that toxins can not, possibly, come from living microbes. Though toxins are abundantly produced in some cultures, they do not appear therein in the first days, when the organisms grow and multiply most proliferously. They begin to appear later on when, in consequence of the accumulation of metabolic products injurious to their health and life, microbes begin to die and disintegrate. Thus, the Dicks themselves recommend to gather the toxins of the scarletinal streptococcus between the fourth and the sixth day after the inoculation of the broth.

Clinical proof against the origin of toxins from living organisms is furnished by the following facts. The onset of specific symptoms in acute systemic infectious diseases, for instance, in scarlet fever and in measles, is preceded by the so-called "period of incubation." During this period the pathogenic invaders multiply and spread unchecked. Their growth and multiplication can go on unimpeded, as the defensive mechanism of the host is not, as yet, developed. But, strange to say, specific symptoms due to toxins are conspicuous by their absence during all these days. Toxins must, therefore, be non-existing at this stage, just as they are non-existing during the first days of the cultures. Their production by living, growing organisms is, thus, put out of question, as they would be there in both instances. It is not until the defensive mechanism of the host has been developed[10] and the destruction of the invaders mounts by leaps and bounds that toxic bodies suddenly appear, as shown by the sudden rise of fever, the onset of the quickly spreading rash and the now rapidly developing toxic condition of the patient. Yet, undisturbed by the mass of clinical evidence against them—the incubation period free of toxins; the flooding of the blood with specific organisms at the early stages of the diseases, as shown by Ferry and Fisher[11] in measles and by

Cincu and Manoliu in scarlet fever; the sudden onset of the specific symptoms at the time when the reaction of the host begins, independent of the growth and multiplication of the microbes; the successive spreading of the rash from the head downward, so characteristic for scarlet fever as well as for measles and smallpox, irrespective of the condition of the throat; the presence of the living contagion in the scales desquamating from the skin—the Dicks insist that all these symptoms are due to toxins produced by the streptococcus growing in the throat and absorbed therefrom into the blood stream. Such contentions can only be amusing. They are such a colossal mockery, such a colossal travesty on scientific truth that a debate is out of question until the Dicks, aside from mere fancy statements, give us at least a semblance of evidence supporting their contentions.

Just when and wherefrom the toxic bodies develop during the course of infectious diseases is not far to seek after what has been said before. Their intimate connection with the killing of the pathogenic invaders by the host leads us, even from simple clinic observation, to the inevitable conclusion that they must originate during the disintegration of the dead microbes themselves or, in other words, that they must be digestive split products of the foreign protein composing the body substance of the invaders.

This conclusion is supported by a superabundance of experimental evidence, produced by a host of European and American investigators, especially by Victor C. Vaughan, of Ann Arbor, Mich., and his collaborators. It would be impossible to adduce here even a fair fraction of this voluminous evidence. Only the shortest possible synopsis can be given—just enough to allow a ready comprehension of the situation. The details can be found in Vaughan's book.[12] Suffice it, therefore, to say that every protein molecule, no matter where it comes from, whether from the animal or the vegetable kingdom, has a nucleus about which the complex structures cluster that make up the large bulk of this molecule. As the molecule is broken down during the process of disintegration, this nucleus is more and more denuded and shows a gradually increasing poisonous character, owing to its acid nature. These conditions can readily be visualized by likening the nucleus of the molecule to the stem of a grape around which the rest of the molecular structures cluster as the berries of the grape do around the stem.

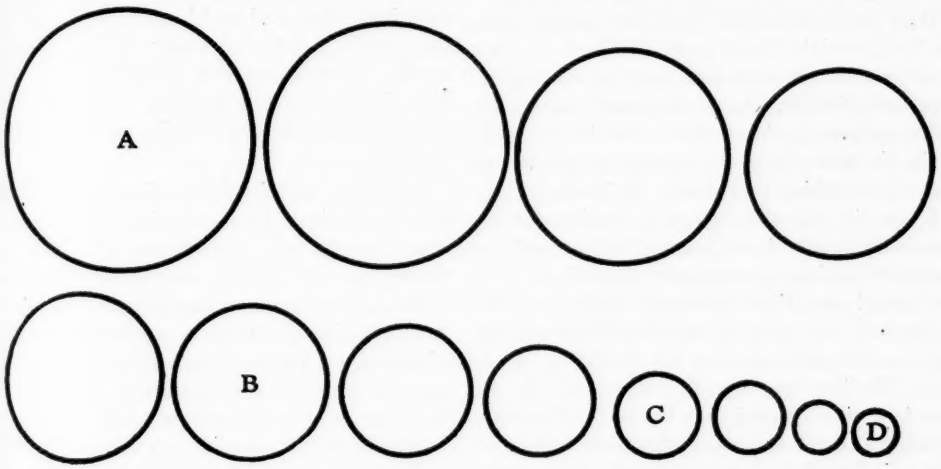

Fig. 1. A. Unbroken molecule. B. Specific Toxin. C. Acid, non-specific poison. D. Harmless end product.

The relation of the toxins to this poisonous nucleus on the one side and the interrelation of these two to the unbroken protein molecule on the other side seems to be very little understood, though a definite knowledge of these matters is of greatest importance from a scientific as well as a practical viewpoint. I have, therefore, added here a graphic depiction of these interrelations to facilitate a better comprehension of this only seemingly complicated subject. (Figure 1.)

The circles, which gradually decrease in size, symbolize the protein molecule as it is broken

down into smaller and smaller fragments. The smallest circle represents the end products that are the result of normal catabolism. They are the products ready for excretion and are non-poisonous. Of the intermediary products, between the unbroken molecule and the end products, two are of interest to us: 1, the toxins and, 2, the poisonous nuclei. As there is a vast difference between them, we have to take them up separately.

1. The toxins, also called "soluble toxins" or "exotoxins." They are the result of a rather deep disintegration, or digestion, of the original molecules. Their size is much smaller than that of their parent molecules and they readily pass the fine porcelain filters that hold back the unbroken protein. Nevertheless, they are still highly complicated bodies. As we have seen above, they still constitute specific antigen, that is, they still retain the structure of the protein specific to the source from which they come. It is due to this fact that the injection of specific toxins, for instance, of diphtheria or tetanus toxins, leads to immunity against the respective organisms. Under normal conditions parenteral foreign protein is removed only after it has been disintegrated into its end products, that are ready for excretion. Furthermore, specific antigen can be digested, or disintegrated, only by specific ferments. Therefore, the body, upon the inoculation of toxins, is forced to elaborate specific ferments to remove the injected specific antigen. With the elaboration of these specific ferments, however, immunity is established, because these same specific ferments produced to disintegrate the injected specific toxins can, and do, also kill and disintegrate the specific organisms from which these toxins come. A concrete example of this kind has been furnished above by showing that the antidiphtheritic ferments, or antitoxins, elaborated upon the injection of diphtheritic toxins, promptly kill the diphtheria bacilli, provided complement is present.

2. The poisonous nuclei, also called "endotoxins." As shown in the graphic picture above, they develop from toxins by further disintegration. Their character, as Vaughan has shown experimentally and Pfeifer has shown clinically, is identical in all instances, no matter from what source they come. They are divested of all specificity and may be likened, to again use our former simile, to the stem of a grape robbed of all its berries. When injected, they do not lead to immunity for the reason that the body of the host is not forced to develop specific ferments for their disintegration. Alkali detoxifies them in vitro and in vivo, as their toxidity is due to their acid nature. Clinically this fact is of greatest importance. The high acidosis which develops in acute infectious diseases, especially in influenza, when, at the time of the full development of the specific symptoms, the killing and disintegration of the invading organisms by the host is going on at a lively rate, is due to these acid nuclei denuded of all specificity. Their similarity, in all instances, is shown by the clinical experience that sodium bicarbonate is efficacious in relieving the distressing toxic symptoms equally promptly, or even miraculously, whether they develop during measles, scarlet fever, influenza, pneumonia, or during any other acute infection.

Facts and Fancies Concerning the Neutralization of Toxins. In considering this subject we must keep in mind that toxins as well as antitoxins are both highly complicated albuminous bodies. From a chemical viewpoint, therefore, a neutralization of toxins by antitoxins seems out of question. All those workers who attempted to prove it admitted their failure at the end. Furthermore, a chemical neutralization, such as the neutralization of an acid by a base or vice versa, is directly opposed by the fact that the union of toxin and antitoxin is not stable. It is that of a barnacle attached to the bottom of a boat and can readily be disrupted, for instance, by heat. In this connection it will be of interest to recall an incident which not so long ago aroused much unfavorable comment in medical as well as in lay papers. In January, 1924, there occurred in Massachusetts severe symptoms of intoxication in 42 out of 54 children who, for immunizing purposes, had been inoculated with diphtheria toxin-antitoxin mixtures that had previously been exposed to prolonged freezing. During the investigation that followed the authorities came to the conclusion that the severe symptoms exhibited by the 42 children were due to the dissociation of the antitoxins from the toxins as a consequence of freezing. If freezing can restore the toxic qualities of perfectly neutralized toxins, as it did in this instance, the neutralization can not possibly be a chemical one.

Very recently, a flood of light has been thrown

upon these matters by Larson and Eder[13] and by Larson, Huenekens and Colby,[14] of St. Paul and Minneapolis. They found that sodium ricinoleate and other soaps detoxify toxins better than the antitoxins do, and that they detoxify all the different kinds of toxins equally well without disturbing their immunizing qualities. Though Larson and his collaborators admit their inability to explain these findings, the cause of the phenomenon can readily be furnished. Soaps are strongly alkaline. As the poisonous bodies that bring about the toxic symptoms are acid in character, the detoxification is due simply to the neutralization of the acid by an alkali. That the same alkali detoxifies so many different toxins, as found by these same investigators, can also readily be seen. It is due to the fact, repeatedly mentioned above, that the acid nuclei of the protein molecules are identical, or similar, in all instances at least so far as their affinity for alkali is concerned. If the soap neutralizes the acid radicals immediately within the toxin or if it anchors therein to unite with the acid as soon as this gets free, remains to be seen. At any rate, the facts adduced are a staggering blow to the antitoxin theory. To think that Nature should elaborate laboriously a specific antitoxin for each of the great variety of toxins while a little alkali will accomplish the detoxification in all instances equally well or better, is too silly to be considered seriously by anyone who has had the privilege to study, even superficially, Nature's wonderful work.

With the chemical neutralization dismissed, we still have to consider a possible "biological" neutralization. It is an undeniable fact that the addition of a definite quantity of antitoxic serum to a definite quantity of toxins makes, upon their injection into an animal, these otherwise poisonous toxins innocuous. It is a further fact that, if the proper mixture has been determined, multiples of the original quantity may be injected with equally happy results. It is this latter fact that has helped much to support the antitoxin theory. But even this fact disproves rather than supports the antitoxin theory, inasmuch as this law of multiples, as it is called, does not hold good if larger quantities of neutralized toxin-antitoxin mixtures are injected. For instance, an animal may show no symptoms if it is injected with, say, 10 or 12 lethal doses of toxins, neutralized by antitoxins. It does, however, show symptoms, even of the most serious kind, if, say, 15 or 20 lethal doses of toxins, also fully neutralized by antioxins, are injected. Besides, Behring[6] already has shown that toxin-antitoxin mixtures, completely neutralized for one species of animals, say guinea pigs, are poisonous, or highly poisonous, for another special of animals, say mules, and may even kill a third species, for instance, monkeys. To cap the climx, it may even happen that highly immunized horses, whose blood is swarming with antitoxins, are killed by quite small doses of neutralized toxin-antitoxin mixtures that do no harm whatsoever to non-immune animals. Under such circumstances, biological neutralization is, of course, also out of question.

However, applying the principle of constructive criticism, which has been upheld throughout this treatise, it will be necessary to explain just why antitoxins neutralize toxins in one instance and fail to do so in another instance. As we have seen above, antitoxins are digestive ferments that digest, or disintegrate, the toxins into innocuous end products, ready for excretion. If this disintegration is sufficiently fast, the poisonous intermediary split products do not exist long enough to irritate the tissues. They are broken down into harmless end products before inflammatory symptoms can be caused. In order to accomplish disintegration with sufficient speed, enough ferments or antitoxins must be set at work. If this has been done, that is, if enough ferments have been added to the toxins to disintegrate them so fast that toxic bodies do not exist sufficiently long to cause inflammatory symptoms—we say that the toxins are neutralized. But the fact, evolved above, that toxin-antitoxin mixtures neutral for one species of animals may be toxic for another and even lethal for a third species, proves conclusively that, besides the toxins and the ferments, another, a third, factor enters into the process of neutralization. This third factor is complement.

Antitoxins and Complement. Complement is a substance which ferments need while working. It is, so to speak, their chemical tool. Complement is to the ferment what dynamite is to the laborer who is blowing up stumps. Without complement ferments can no more kill and disintegrate microbes than the laborer can blow up stumps without dynamite.

Ferments are a product of the cells and can be

elaborated according to the needs of the body. They are not used up during their activity. Just as the laborer can blow up one stump after the other, so ferments can disintegrate one protein molecule after the other or can kill and disintegrate one microbe after the other. Thus, the experiment of Pawson and Redowitz[7] shows that as little as 1½ to 2 units of antitoxins can kill large doses of virulent diphtheria cultures. On the other hand, complement is used up in proportion to the work accomplished, as is dynamite. It is not elaborated by the cells of the body and can, therefore, not be replenished by cell work.[15] Its available quantity is limited. The original supply of complement, that is, the supply which is naturally present in every healthy body and is stored in the nuclei of the cells,[16] is reduced during the activity of ferments in proportion to the number of germs killed and disintegrated, just as the original supply of dynamite is reduced in proportion to the number of stumps blown up. When the complement is all consumed, the ferments stop working, as does the laborer, per force, when his dynamite is gone.

The absolute and unfailing dependence of the activity of ferments upon the presence or absence of complement is clearly demonstrted in the 1, 2, 3 and 4 plus phases of the Wassermann reaction.

To make a Wassermann test we take specific, specially prepared, ferments that are able to dissolve red sheep blood corpuscles. If we add these sheep corpuscles to the ferments, the corpuscles are not dissolved until we also add the chemical tool of these ferments, that is, the complement, contained in fresh guinea pig serum. If, thus, the ferments plus corpuscles plus complement are placed together into a test tube in a suitable quantity of fluid, all red sheep corpuscles are dissolved. The amount of complement necessary for a given test is always carefully titrated, so that it is just sufficient to dissolve the added sheep corpuscles. If we add now to the mixture of ferments, corpuscles and complement something that takes away a portion of the complement, say, one quarter of it, as we can do by adding a definite quantity of syphilitic blood containing complement fixing bodies—the ferments have enough complement left to dissolve only three-quarters of the blood corpuscles. One-quarter, or 25%, of them is left undissolved. In the same way, the laborer, who has been supplied with sufficient dynamite to blow up four stumps, can blow up only three stumps if one-quarter of the dynamite is again taken away from him. As the positive Wassermann reaction is characterized by the inhibition of hemolysis, the 25% of undissolved corpuscles, or the one stump not blown up, represent a one plus Wassermann reaction. If we add sufficient syphilitic blood to take away one-half of the complement, or if we take away from the laborer one-half of his dynamite—50% of the sheep corpuscles remain undissolved, or two stumps remain not blown up. This would represent a two plus Wassermann reaction. If we add sufficient syphilitic blood to take away three-quarters of the complement, or if we take away from the laborer three-quarters of his dynamite—75% of the sheep corpuscles remain undissolved, or three stumps remain not blown up. This would represent a three plus Wassermann reaction. Finally, if we add sufficient syphilitic blood to take away all the complement, or if we take away from the laborer all his dynamite—all sheep corpuscles remain undissolved, or all the stumps remain not blown up. This would represent a four plus Wassermann reaction.

These details have been advanced so minutely in order to demonstrate clearly the supreme influence exerted by complement upon the activity of ferments in determining precisely the amount of work that may be accomplished. It matters not whether these ferments dissolve red blood corpuscles or kill and disintegrate pathogenic microbes. There is no difference between them so far as this fundamental principle is concerned. It needs complement to keep the hemolytic ferments active in the Wassermann test and it is complement that makes the diphtheria antitoxins swiftly kill the diphtheria bacilli when injected into an animal—while both kinds of ferments are paralyzed if complement is lacking, as it is seen in the positive Wassermann test and in the diphtheria culture to which antidiphtheritic serum has been added.

The arrest of the activity of ferments through lack of complement leads to different consequences according to whether or not the tissues are able to make up a deficiency arising in the blood. In the first instance, the symptoms which appear at first, gradually subside again, as the needed complement is slowly furnished by the tissues. This is true in the case of the mule, above referred to. In the second instance, when the tissues also are drained of their complement[15]

and an arising deficiency in the blood can no longer be made up, death ensues. This is true in the case of the highly immunized horse that succumbs to a small dose of toxins, a practical experience that has always been a great puzzle to antitoxinists. The complete drainage of the animal's body of complement is, in these instances, due to the long continued injections of toxins. Toxins are protein split products, that is, intermediary products of digestion. For their disintegration ferments need complement just as much as they need it for the killing and disintegration of living microbes. As a consequence, immunization always goes hand in hand with a loss of the natural complement. This loss is the greater, the longer toxins are injected, so that highly immunized horses are occasionally killed by a small dose of toxins because even the small quantity of complement needed to disintegrate the toxins into harmless end products can no longer be secured. The enormous number of available specific ferments, or antitoxins, can, then, no more protect the horse than an equal number of laborers can blow up stumps if they have no dynamite.

In the case of sickness, for instance in diphtheria, a complete exhaustion of complement comes on much more swiftly in consequence of the rapid killing and disintegration of the ever increasing number of bacilli. The universally advocated early administration of antiserum owes its acknowledged great value to the fact that the injected defensive ferments can begin to kill the relatively small number of invaders at a much earlier time, when a sufficient quantity of complement is still at hand. As the bacilli by their rapid multiplication increase the bulk of their collective body substance, and as with the increase of their collective body substance the quantity of complement needed for their killing and disintegration increases in proportion or, to be more to the point, as the quantity of complement available in the body of the ailing child relatively decreases in proportion as the bulk of the collective body substance of the microbes increases—the death warrant is signed as soon as the quantity of the specific foreign protein, represented by the bodies of the invaders, outbalances the relative quantity of complement available in the body of the child for the destruction and disintegration of the microbes. That under such conditions the injection of additional antitoxins is of no avail is self evident, as all ferments are inert without complement and the entire defensive mechanism of the child is paralyzed in consequence. It is at this juncture that the antitoxin theory through its misguided devotees strikes its fatal blows. As antitoxins are supposed to dispose of the toxins without the use of complement, thousands upon thousands of children are killed annually because antitoxinists ignorantly withhold the complement that would save them.

Comment. It would be a most unfortunate mistake to construe what has been said as meaning that antitoxins have no worth. It is only the wrong interpretation of their function that has been criticized. Behring's discovery of the fact that specific defensive ferments, called antitoxins, can be developed in the animal for ready use in the human body against the respective pathogenic organisms is, no doubt, of momentous importance to the human race. It is even of far greater importance than the medical fraternity at large does, and can, realize at present for the reason that, owing to the fatal influence of the antitoxin theory, the potential blessings to be derived from antitoxins are woefully curtailed. Ferments need complement to keep active. Without complement they are paralyzed. If, therefore, we inject ferments in the form of antisera without duly adding the needed complement, we can possibly save only a part of those children that can, and will, be saved if complement also is provided. Unless this is done, the slaughter, so insidiously effected by the antitoxinists, will increase by leaps and bounds with every newly developed antiserum. Thus, with the measles and scarlet fever antisera found, the children that die hereafter of measles or scarlet fever are equally the pitiful victims of the antitoxinists as are the doomed diphtheritic children of today and yesterday. They could practically all be saved if complement were administered with the ferments. But the damage done by the antitoxin theory extends still further. The deaths not only from these acute infectious diseases, but also from such chronic scourges as syphilis and tuberculosis, are in great part due to lack of complement. In the case of syphilis, it is true, we already possess in mercury, arsenic and bismuth fairly well working remedial complements,[17] but we lack them entirely in tuberculosis. As the supply of ferments can be increased in any given case, either by

injecting antisera in acute cases or by stimulating the body to greater production in chronic cases—it is a supply of the different complements that is needed most for the cure and eradication of infectious diseases. It will lead us to therapeutic triumphs undreamed of in former days, as there are no means which can, or will, ever be developed by human scientific efforts that can possibly compare in strength and swiftness of action with Nature's own never failing and ever harmless remedy—ferment plus complement.

With this wonderful vista of possibilities before us, the most formidable obstacle in our way to success is the antitoxin theory. It is only over its grave that a realization of these brilliant prospects can be accomplished. The work, though, will be strenuous. It will take time and patience to dislodge from the mind of the medical profession a theory that still today holds sway unopposed and unrestricted. How difficult it will be to be successful can no better be illustrated than by relating the following memorable incidents: In an effort to make a beginning and to support words by deeds, I addressed Ludwig Hektoen, of the John McCormick Institute for Infectious Diseases, to grant me laboratory facilities with a view to find the antidiphtheritic complement and to save the now doomed victims of diphtheria. The reply was curt and negative. No hearing was granted. A similar result had the same request directed to the Rockefeller Institute for Medical Research. A third request, sent to the Council on Pharmacy and Chemistry of *A. M. A.*, was answered from the office of the *Journal* of the American Medical Association by Simmons jokingly referring me to some commercial laboratories of Chicago. Nothing could show better the deplorable mental attitude of the antitoxinists than this ghastly joke on those tens of thousands of bereaved parents who lost their children since 1922 when I showed how to save them —a ghastly joke that is no less also on those parents who will lose their children hereafter as victims of the antitoxinists until these latter begin to see their fatal mistake and discard their silly theory.

From such men, therefore, as are "clothed with the responsibility of outlining medical policies"[18] and who control the best laboratory facilities of this country and the main channels for the distribution of medical knowledge, little, if anything, can be expected in the way of correcting that murderous mistake, the antitoxin theory. They should realize, however, that with the means known to save these victims, their death, as time goes on, more and more approaches murder, unless either my charges are disproved or the search for the needed complements is begun in earnest. But there is hope that the general practitioners of this country who, in the last analysis, must necessarily stand the blame for this monstrous fallacy, will not fail to force an authoritative investigation of the charges here preferred or, better, participate freely in the discussion that is absolutely necessary to clear the atmosphere. With the evidence here adduced intricate immunological knowledge is not necessary. All that is needed to pass judgment is an average amount of good common sense. Even a layman, without any medical knowledge, can readily see that Nature would mop the floor and let the faucet run if she would elaborate antitoxins that neutralize liberated toxins but do not "act directly on the infecting bacilli," thus allowing the faucet, as it were, to continue pouring forth a stream of new toxins. With the discussion forced, however, and the antitoxin theory together with its devotees brought to trial, the object of this treatise has been accomplished and the years of patient preparatory work devoted to this subject have not been sacrificed in vain.

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INTESTINAL TOXEMIA*

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In 1868 Senator put forth the idea that decomposition of proteins within the alimentary canal under ordinary conditions resulted in the formation of substances toxic to the host. This thought was passed up more or less casually until about twenty years later when Bouchard claimed that the amount of putrefactive products eliminated in the urine was a measure of the degree of intestinal putrefaction. This theory slowly gained a foothold until 1907 when Metchnikoff[1] wrote his "Prolongation of Life" in which he supported the belief that premature senescence was the result of toxins produced in the intestinal canal by harmful bacteria. He believed that a change in the intestinal flora if maintained would prevent premature aging of tissues and thereby prolong life. He employed the use of cultures of *B. Bulgaricus* to produce a change in the intestinal flora, and thus was the first one to stimulate work along this line. However, as was shown by the work of Herter and Kendall[2] in 1908 the *Bacillus Bulgaricus* cannot grow and be colonized in the intestinal canal. This fact has since been proven by numerous investigators. However, this idea gained some prominence, and led other men to try the use of various bacteria in order to change the intestinal flora. In 1920 Rettger and Cheplin[3] working with the *Bacillus acidophilus* were able to definitely change the intestinal flora with this organism when suitable amounts were taken or when either lactose or dextrin were given with sufficient amounts of *B. acidophilus.*

Kendall and Haner[4] state that germ-free alimentary tracts are impossible of realization, except under circumstances wholly beyond livable conditions and even temporary sterilization of intestinal contents is not feasible with any disinfectant known to medicine.

They further state that attempts to demonstrate viable *Bacilli Bulgaricus* in the feces of human subjects even after prolonged administration of milk soured by *Bacillus Bulgaricus* in pure culture have failed. Many varieties of pills, tablets and vials purporting to contain live and active cultures of B. Bulgaricus have been sold and are still being sold to the uninformed public. It cannot be said that these preparations do harm, but they do little or no good.

Kendall and Haner[4] state that the cardinal principles for Acidophilus therapy are: First, a microbic culture suitable for and acclimatized to the intestinal conditions in man. Second, a properly modified diet to reduce protein residua in the human alimentary canal to relatively small amounts, and a carbohydrate regimen so adjusted as to provide a continuous supply of this absolutely necessary type of foodstuff throughout the small and large intestine to at least the sigmoid flexure. Third, the absence of a contraindication to a carbohydrate rich diet. This last principle is important because there are many patients who are strongly susceptible to carbohydrates in that they have a good deal of gas formation after the ingestion of them.

Following the work of Metchnikoff in 1907, Combe wrote a book called "Intestinal Auto-Intoxication" in which he dealt at length with various products of intestinal putrefaction and their correction and elimination with various dietetic and medicinal measures. His ideas were mainly in harmony with those of Bouchard's. In 1910 Arbuthnot Lane promulgated the theory of "Chronic Intestinal Stasis"; attributing a great many disease entities as being results of intestinal stasis. His ideas gained a rapid and strong foothold with a great many of the medical profession; some men were very enthusiastic and attributed all ailments to stasis. On the other hand, there were many who did not believe that intestinal stasis *per se* existed but in a very small percentage of cases; among these advocates being Einhorn, Hurst, Bassler and Daniels.

Since Lane's work there have been a great many articles written pro and con and today, although the medical profession is not as enthusiastic as it was in 1910, still such a condition as intestinal toxemia undoubtedly exists.

Before taking up the clinical manifestations of intestinal toxemia I think it would not be amiss if we reviewed somewhat the physiological processes which take place in the gastro-intestinal tract and in this manner we will more clearly be able to understand the pathological processes leading to intestinal toxemia, these being manifestations of a perversion of the physiological processes.

As fats play an unimportant role in the determination of the types or the multiplication of the

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gastro-intestinal flora, and as they never initiate fermentation or putrefaction but may increase either, we will leave them out of the discussion. Carbohydrates in the form of starch when ingested are first acted on by the ptyalin in the saliva changing the starch to maltose and achroodextrin. Other polysaccharides or disaccharides are not acted upon until they reach the small intestine, where they are acted upon by the various enzymes and hydrolized to monosaccharides, this being necessary before the body can use the carbohydrate. In regards to the proteins they are first acted upon by the pepsin in the stomach being changed in part to proteoses and peptones. These are further acted upon by the trypsin in the duodenum and the erepsin in the small intestine, the final products being amino acids. As such they are absorbed into the blood stream and stored in the various organs of the body.

Now an examination of the small intestine in the region of the ileo-cecal valve shows that under normal conditions most of the protein has been absorbed before reaching this point. The process, however, is continued in the large intestine modified somewhat by bacterial action, and finally the amount that escapes absorption appears in the feces. Digestive and absorptive processes no doubt continue for a time in the large intestine since it contains undigested food along with various intestinal enzymes. Putrefaction takes place in an alkaline medium and is of normal occurrence in the large intestine. Under normal conditions on a mixed diet, it appears that in the small intestine carbohydrate fermentation with acids for its end products of digestion is the action of the bacteria, while in the large intestine protein putrefaction with the production of an alkaline reaction occurs. Pathologically through proteid digestion proteid end products may be produced that are toxic and when these are absorbed they can be the cause of marked constitutional symptoms.

There has been considerable discussion as to the conditions that restrain the protein putrefaction in the small intestine. Kendall[5] has pointed out that as long as carbohydrate material is present the bacteria attack the carbohydrate and spare the protein, in addition as long as carbohydrates are present and undergoing fermentation the organic acids produced tend to neutralize the alkalinity of the intestinal secretion and may even give an acid reaction; this being unfavorable to the activity of the bacteria which attack the proteins. This principal is put into use in the feeding of *B. acidophilus*. It has been shown by Rettger and Cheplin that lactose and dextrin are the two carbohydrates upon which *B. acidophilus* will grow most readily. Therefore in order to be successful with the feeding of *B. acidophilus* there should be a plentiful supply of carbohydrate in the colon at all times.

From this standpoint it would seem to follow that the nature of the bacterial activity in the small intestine will vary with the character of the diet and moreover that the diet may be chosen intentionally so as to favor one or the other kind of bacterial action. Although diet is considered one of the most important factors in altering the intestinal flora, other factors as pointed out by Dragstedt and others, are the degree of intestinal absorption, rate of intestinal secretion and the condition of motility.

The list of end products of putrefaction is a long one, but the ones to which greatest importance are attached are indol, skatol and phenol.

Many of the products of putrefaction are given off in the feces, while others are absorbed in part and excreted subsequently into the urine. In this latter connection especial interest attaches to the phenol, indol and skatol, as it was by a study of these substances in the urine that Bouchard first made scientific investigations of the subject of intestinal toxemia. Phenol after absorption is excreted in the urine in the form of an ethereal sulphate (Phenolsulphonic acid). Indol and skatol undergo oxidation to indoxyl and skatoxyl and are excreted in the urine in the form of indoxyl sulphuric acid and skatoxyl sulphuric acid. The amount to which these substances occur in the urine is, therefore, an indication of the extent of putrefaction in the large intestine.

The end products of fermentation consist of organic acids, the most common being lactic, acetic, formic, oxalic and hippuric acid. Oxalic acid heads this list in toxicity.

Having reviewed the physiology of the gastro-intestinal tract somewhat, we will now review some of the gastro-intestinal bacteriology and stool examination.

The examination of the stools deserves much more attention than it usually receives. Just as

the sputum is commonly limited to a search for the tubercle bacillus, so that of the feces is a matter of searching for parasites, ova and blood; so that much of value passes undiscovered. Normal stools consist of the undigested portion of food, bacteria, intestinal secretion, formed and unformed elements from the mucosa, salts and products of digestion. The amount per day varies widely with the diet, but a general average is from 120-250 grams. The bodies of bacteria, most of them dead, make up about one-third of the entire weight of the dried stools. The normal stool is usually alkaline in reaction. An examination of the feces of a healthy adult with the higher objectives of the microscope will show that a large portion of the fecal mass is made up of bacterial cells. It is realized that the ingested food does not contain this large number of bacteria, so that it must be assumed that there is a rapid development of the organisms in the intestinal tract. It is obvious therefore that the alimentary canal from the viewpoint of bacteriology is a most efficient incubator and cultural medium combined. The characteristic infantile intestinal flora appears on the third day post-partum; the dominant organism being the *B. bifidus*. In breast fed infants this organism remains the most important, while in artificially fed infants the *B. acidophilus* becomes the predominant organism. As adolescence comes on the general tendency in individuals on an average mixed diet is for *B. coli* to become the dominating organism. The characteristic feature of the normal adult fecal flora as compared with the infantile nursling flora is the very heterogeneous variety of types of bacteria in the former in sharp contrast to the homogeneity of types of bacteria in the latter.

The stomach in health is quite free from bacteria as a rule. The duodenum of adults is relatively poorly populated with bacteria in the interdigestive periods, the most common organism, however, during the digestive periods is the Micrococcus ovalis. According to Kendall and Haner[6] this organism is presumably not a contributor to intestinal putrefaction. The lower levels of the small intestines become progressively richer in bacteria. As a rule cocci predominate in the lower jejunum and the upper ileum, but Gram neg. bacilli of the colon group appear in moderate numbers.

The cecum and ascending colon are the regions of most intense bacterial proliferation in health, but the number of living bacteria in the intestinal contents diminishes rather abruptly from the sigmoid to the rectum. The bacteria commonly present in the ileo-cecal region are of many and varied types the colon-proteus and mesentericus groups being present.

The symptomatology induced from the products arising from the decomposition of proteins by the action of bacteria in the intestinal tract depends largely upon the organism or organisms concerned; it varies from the somewhat insidious slowly progressing, so-called auto-intoxication to the acute toxemia, such as typhoid fever.

The important factor from the viewpoint of this discussion is to realize that the formation of nitrogenous products from proteins which are being utilized by various types of intestinal bacteria for energy may be injurious to the host. These substances are of unknown composition for the most part, but are most likely nitrogenous products.

Since the bacteria which incite intestinal disturbances do not produce soluble toxins, antitoxins cannot be prepared and likewise sera have been unsatisfactory. There is, therefore, little that can be accomplished serologically with present methods in the treatment of intestinal disturbances of bacterial action. There are two ways, however, in which direct influence may be applied to bacteria in the intestinal tract: 1, by a substitution of harmless types of organisms for abnormal types; this was illustrated above by the use of *B. acidophilus;* 2, by varying the diet of the host in such a manner that the intestinal contents at the desired level shall contain nutritive substances that may be reasonably expected to shift the metabolism of the offending organism. We are now able to enter into a clinical discussion of intestinal toxemia.

Combe defined intestinal auto-intoxication as a toxemia caused by qualitative or quantitative alterations in a normal digestion; this including the digestion brought about by the enzymes of the stomach and intestines and also by the action of the bacteria which thrive in the intestinal tract.

Lane in talking about chronic intestinal stasis defines the condition as such a delay of the contents of the intestines in some portion of the gastro-intestinal tract, but more particularly in the large bowel, as allows the absorption into the

circulation of a larger quantity of toxic material than can be dealt with effectually.

Hale White states that the term alimentary toxemia at once shows our ignorance, for it is unscientific to group cases of poisoning according to the point of entrance, they should be grouped according to the variety of the poison. Morgan[7] states that auto-intoxication or true intestinal toxemia is of very rare occurrence. He further states that absorption of toxic substances from the small gut seldom if ever occurs; as stasis in that part of the gastro-intestinal tract is rare and is of short duration. Inasmuch as it is well known that absorption from the bowel can take place only in the presence of liquid contents and since the feces begins to harden in the ascending colon the only place where absorption might take place would be in the cecum. It is a well recognized fact that the cecum is very rarely the seat of chronic inflammation as occurs so frequently in the distal portions of the colon; hence, one of the necessary factors, namely a diseased mucosa is absent.

This last statement, however, is open to criticism since a diseased mucosa is not necessary; one can readily conceive whereby the toxins would be absorbed by the blood stream just as readily perhaps as the end products of carbohydrate and protein digestion.

Etiology.—A great number of predisposing factors have been mentioned amongst which are, gravitation, overwork, bad hygiene, improper food, continued use of laxatives and cathartics, severe pyorrhea, irregular and hurried meals, imperfect mastication of food, diminished secretion of free hydrochloric acid by the stomach, impaired secretion on the part of the pancreas and an excess of protein food. In addition the various bands and kinks described by Lane are supposed predisposing causes.

Billings[8] states that the conditions which may promote infection of the gastro-intestinal tract are usually not brought to the attention of the physician until too late to use measures of prevention. Myriads of infectious bacteria are swallowed in infected food and in the muco-pus of the nose, throat and bronchi. These organisms to a great extent are destroyed by the gastric and intestinal juices but some under favorable conditions may continue to have or may attain pathogenic virulence and cause local or systemic disease.

As to the exciting factor or factors nothing definite is known although various theories have been advanced. The majority of investigators in this field believe that various nitrogenous products produced by bacterial putrefaction are the exciting factors.

Eustis[9] states that first, the majority of these toxic substances are basic amins formed by the putrefaction of the several amino acids with the loss of carbon dioxide; second, that these putrefactive basic amins have definite physiological actions; third, that they are normally detoxicated by the liver and fourth, that when they are not detoxicated they exert their specific physiological action on the individual. Combe went one step further and stated that other detoxicating agents or lines of defense are the glands of internal secretion.

Many authors, on the other hand, assume that the products of bacterial action on carborhydrates are exciting factors in intestinal toxemia. As oxalic acid heads the list in the matter of toxicity, Lieb[10] states that this acid when absorbed in small amounts produces definite toxic symptoms, and where positive oxalic acid reactions have been obtained the stool has invariably been that of a person with a chronically deranged metabolism.

Hale White sums up the matter by stating that just as we do not know the poison in uremia, so we do not know the poison in intestinal intoxication.

Symptoms.—Prior to the investigations of Lane, retarded passage of fecal current and the symptoms arising therefrom had been broadly covered by the term constipation and considered chiefly as a functional disorder affecting particularly the lower bowel. Lane, however, created an apparently new and important domain and invented the term, intestinal stasis. As yet, however, the subject has not come into a definite and accepted entity of ready and clear understanding.

The symptoms of auto-intoxication arising from stasis include: loss of fat, impaired circulation of the blood, offensive perspiration, staining of the skin, pain and weakness in the skeletal muscles, morning headaches, flatulence, foul breath, constipation and distension with colic at times. Besides these symptoms changes may occur in various organs of the body. Lane ascribing many diseases of the gall bladder, thyroid, pancreas and breasts to intestinal intoxication.

Jordan further states that duodenal and gastric ulcers are primarily caused by chronic intestinal stasis combined with either microbic or chemical changes. This statement is open to much question. One might but mention one fact, namely, that stasis is more common in women, and yet duodenal ulcer is more common in men.

Satterlee states that the most impressive symptoms of chronic intestinal toxemia are caused by early involvement of the nervous system; the gastro-intestinal symptom at first may be very slight.

Harris[11] stated that exophthalmic goiter is due to the excessive absorption of tryptophane from the intestines; this in turn is traceable to the absence of indole producers from the intestine. Absence of indican from the urine indicates the absence of indole producers from the intestine. On the other hand, diffuse parenchymatous goiter is characterized by an excess of indican in the urine. Eustis states that some cases of chronic intestinal toxemia may present symptoms of hyperthyroidism which are relieved by overcoming the intestinal toxemia.

In cases of stasis with toxemia much mucus is present in the stools. Sometimes there is so much secretion of mucus that the habitual constipation is marked by a spurious diarrhea, and the patient complains either of alternating attacks of constipation and diarrhea or of constant diarrhea.

Treatment.—Our knowledge of the processes of digestion and absorption in the normal state is now based upon well founded principles so that the existence of partial or complete failure in any one of the numerous steps can be deduced with considerable certainty by an examination of the stools.

As to the effectual treatment of intestinal toxemia numerous factors present themselves. First, maintenance of a protective intestinal flora by dietetic measures. Secondly, sufficient doses of *B. acidophilus;* thirdly, efficient non-surgical mechanical drainage of the colon as offered by the Schellberg treatment, and lastly removal of foci of infection.

A thorough trial of medical management is advisable before one considers the operation of removal of the entire colon as advocated by Lane.

In regard to dietetic measures it would be well to remember that a marked restriction in the dietary menu may lead to complications on an avitamin basis. Crohn[12] recently reported two cases of ocular lesions like xerophthalmia occurring in patients with ulcerative colitis who had been on a very strict diet with an absence of fat soluble A. These cases promptly cleared up with the administration of substances rich in vitamin A.

In regards to acidophilus therapy one must always keep in mind to have the patient ingest sufficient quantities of either lactose or dextrin in order for the organism to flourish in the intestinal canal.

In closing I will repeat the words of Moynihan, who said: "I do not hesitate to say that the whole question of stasis and toxemia is one which will have to be considered by all of us, and be put to the proof. It cannot be dismissed with a shrug or a sneer for there is truth in the matter. Among much that is dross there lies a nugget of pure gold."

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ANAPHYLACTIC SHOCK AFTER THE INJECTION OF HORSE SERUM

In the *Journal des sciences médicales de Lille* (Nov. 8, 1925), Drs. David and Williate describe their observations in an unusual case of anaphylactic shock. The patient had been given a subcutaneous injection of 10 cc. of fresh horse serum (in the form of antitetanic serum, which happened to be on hand) for the purpose of arresting a menorrhagia which had existed for eight days and was assuming serious proportions. Less than a minute after the injection, the patient became suddenly pale, complained of a feeling of extreme anxiety, then the face became livid and leaden. The respiratory difficulty became marked, the pulse was much accelerated and of bad quality. On insistent questioning, the mother of the patient finally remembered that her daughter had received an injection of antidiphtheric serum nineteen years previously.

Intravenous injections of adrenalin solution (1:1000), in doses of ½ cc. each, were given, and repeated at intermissions of a few minutes; also intramuscular injections of comphorated oil. After about forty-five

minutes, a temporary relaxation supervened, but again the condition became greatly aggravated. The pulse was imperceptible, and severe and uncontrollable vomiting appeared, followed by diarrhea. Generalized urticaria developed, which was almost confluent. The extreme depression, giving rise to frequent attacks of syncope, was alarming. Adrenalin solution was then repeated in large doses, one cc. being given every three hours, subcutaneously. Ouabain was given intravenously and was alternated with injections of caffeine, and of camphorated oil. After the first injection of adrenalin, the patient went into syncope, and death seemed imminent. During the whole night death was expected every moment, but finally the radial pulse once more became perceptible, and the vomiting ceased. However, the patient did not regain consciousness until the second day. After forty-eight hours, the urticaria disappeared.

In *La Presse médicale* (No. 15, 1925) a fatal case is described concerning a child in whom death followed a few minutes after the first injection of antitetanic serum, which had been made for prophylactic purposes, because the appearance of a wound was alarming. This girl had never received injections of any serum whatever. She had never eaten uncooked horse flesh, she was neither asthmatic nor subject to urticaria, she did not show signs of status lymphaticus, nor had she ever been subject to convulsions. However, her weight suggested a marked neuropathic heredity.

In this case, it could not be a question of acquired anaphylaxis, and yet, because of the resemblance presented by the case, the cause of death must be considered analogous to that which occurs in anaphylaxis.

These observations correspond to those symptoms that sometimes are very alarming, and which are observed in colloidotherapy by intravenous injection, and that also may follow intravenous injections of arsenobenzol. It seems probable that all these accidents of shock are due to a physical phenomenon—the formation of a precipitate, a flocculation of the blood serum, as it has been described by Lumière.

Until it is possible to determine in advance that the tissue-fluids of a certain patient are combatible with a therapeutic serum, it is safe, for the purpose of preventing such alarming and calamitous occurrences, to follow a method, when injecting a foreign protein, which has been proved very useful in patients in whom repeated injections of a therapeutic serum are called for. We refer to the method introduced by Besredka. One cc. of serum is suspended in 20 cc. of saline solution. Of this, one-fifth cc. is injected and, every ten minutes, injections of ½, 1, 2, 5, and 10 cc. of the mixture are given. Then 1 cc. of the undiluted serum is given and finally the total quantity of the dose that is to be administered.

[As far as we recall, the method originally suggested by Besredka was, to inject a minute quantity of this serum, say 1 minim, and wait one-half hour before the balance of the foreign protein solution was injected. We have employed the method in this manner repeatedly in patients who had previously suffered distressing anaphylactic symptoms, and thereby avoided all unpleasant disturbances.—Ed.]

This precaution is recommended in patients who are subject to urticaria, migraine, gout, or asthma; also in patients whose parents are subject to these afflictions; in patients with a neuropathic heredity, or in those patients concerning whom but little or nothing is known.

Sometimes, unpleasant, and even serious symptoms follow injections of foreign proteins—not immediately but after longer or shorter periods of time. In these cases, alkalies may be administered with good effects. —*The Endocrine Survey.*

Society Proceedings

ADAMS COUNTY

July 12, 1926. The meeting was held at the Quincy Elks' Club and in the absence of the president, first vice-president and second vice-president, Dr. John A. Koch was elected to preside for the evening. Twenty members and one guest were presnt.

A report of the special committee that had been appointed to investigate the charge to be made for physical examinations of school children sponsored by the Women's Luncheon Clubs of Quincy was read. This report was to the effect that a flat fee of $2.00 per examination be made to these children. The secretary presented bills to the amount of $5.90 and they were ordered paid. The secretary read a communication from the secretary of the A. M. A. to the effect that the House of Delegates of the A. M. A. at the Dallas meeting had recommended that in case of an emergency disaster that the President of the County Medical Society assume charge of local medical relief until such other relief could be arranged. After some discussion it was moved that this matter be referred to the Public Health Committee for further investigation and reported. Seconded and carried. The Secretary made a motion that the August meeting be turned over to our annual picnic to be held sometime during the regular week that the society meets and that full arrangements for this meeting be placed in the hands of the Entertainment Committee, Dr. Grant Irwin, chairman. Seconded and carried. Dr. A. H. Bitter made a motion that the dentists be invited to participate with us at the picnic. Seconded and carried. The Board of Censors reported favorably on the application of Dr. J. Frank Wilson of Versailles for membership in the society. Tellers were appointed, ballots cast and as the result Dr. Wilson was unanimously elected to membership in the society.

In the absence of the regular speaker who was to address the society, Dr. Harold Swanberg read a paper on "The Use of Radium in Uterine Hemorrhage and Fibroids." This paper was discussed by Drs. Montgomery, Miller, Cohen, Bitter, Williams and finally closed by Dr. Swanberg. Dr. H. S. Maupin read a case report of a child's malady and Dr. Hart Litchfield reported a case of a hairpin being found in the intestine at operation in a case simulating appendicitis.

These reports were discussed by Drs. Williams, Montgomery and Irwin.

The meeting adjourned about 10:00 p. m.

HAROLD SWANBERG, Secretary.

KANKAKEE COUNTY

The June meeting of the Kankakee County Medical Society was held June 17, 1926, at the Kankakee Country Club, to which the members' wives, together with the doctors and their wives of Iroquois and Ford counties were invited. The meeting was presided over by the president, Dr. N. T. Stevens, Clifton. The afternoon was enjoyed with golf and cards.

At 6:30 o'clock a sumptuous banquet was served, which was followed by an enjoyable entertainment consisting of music by the Clifton Trio, which was excellent, also a number of readings by A. A. Raboin, which were enjoyed by everyone present.

At the conclusion of the program dancing was the diversion of the remainder of the evening. Vic's orchestra furnished the music.

All reported a fine time. There was a large attendance of physicians and their families.

H. E. DELAVERGNE, Secretary.

MARION COUNTY

As has been the custom for years the Marion County Medical Society met July 23, 1926, at what was formerly Rainey's Lake, near Salem, Ill. In transferring the ground to the Salem Country Club, Dr. Geo. Rainey, long a very prominent surgeon of southern Illinois, made the provision that the doctors of Marion County have the privilege of meeting there twice a year for picnics and regular meetings. The Salem Country Club have greatly enhanced the natural beauties present and purchased additional ground for a splendid nine hole golf course. The doctors of Salem and members of the Country Club saw to it that all who wished had an opportunity to play golf, fish or swim. The children especially enjoyed the water. At noon a basket dinner was served by the doctor's wives, and was enjoyed by all. After feasting we went into the club house and the meeting was called to order by the president, Dr. H. D. Gillett of Centralia. We were very fortunate to have with us Dr. Mather Pfeiffenberger of Alton, president of the Illinois State Medical Society, who read a paper on "Cholelithiasis and Cholecystitis" which was very instructive and enjoyed by everyone. The discussion by Dr. Buckmaster of Effingham was handled in his usual masterful way. We were next entertained with some fine music by two children of Dr. and Mrs. Carrigan of Sandoval. As we were about to adjourn it was proposed that we invite the ladies to form an auxiliary to our County Society. The meeting was then adjourned, some to play golf, some to fish and some to conversation and cigars. The ladies immediately took possession and proceeded to form an auxiliary. Mrs. W. N. Hamilton, Odin, being chosen president; Mrs. W. L. Finn, Iuka, vice-president, and Mrs. S. D. Carrigan, Sandoval, secretary-treasurer. Very soon thereafter they were around soliciting a contribution and now they have an organization with money in the treasury. We believe the auxiliary will be a help to us all, socially and in a business way. All of these ladies vote and talk, and votes speak very loud. We also believe in unity there is strength.

Our belief in unity is so strong that we have organized a Four County Medical Society comprising the counties of Clay, Clinton, Effingham and Marion, with committees from each county to watch adverse legislation and keep the doctors of said counties informed as to standing of candidates and obnoxious bills in the State Legislature.

W. N. HAMILTON, Secretary.

PIKE COUNTY

The Pike County Medical Society met at Pittsfield April 22, 1926. After dinner at Koepping's the members and visiting brothers repaired to the Lions Club room for the meeting. The matter of a memorial to the memory of Drs. John T. Hodgen and Henry Mudd was taken up. Both of these men who attained eminence in the profession were in their earlier lives residents of Pittsfield, and a movement has been started to erect some sort of appropriate memorial to them in the town of their boyhood and early experience in professional life. Dr. Carl Black of Jacksonville was present and spoke on the subject, as did several members of the Pike County Society. It was moved by Dr. W. E. Shastid, and the motion carried, that Drs. S. B. Peacock, F. N. Wells and S. L. Smith be a committee to investigate the matter of procuring a bronze tablet for a memorial and report to the next meeting.

In the election of officers for the coming year Dr. P. N. Chiasson of Griggsville was elected president and Dr. O. H. Berry of New Canton, vice-president.

Dr. W. E. Shastid of Pittsfield, who has for the past 12 years been our very efficient secretary-treasurer, announced he would not be a candidate for that office. Dr. Shastid stated that he had missed but four meetings in the twelve years, and those because he was abroad when they occurred.

Dr. F. N. Wells of Pittsfield was elected secretary-treasurer. The Society unanimously voted their appreciation of Dr. Shastid's untiring and efficient service during the past twelve years.

Dr. Chiasson, the new president, read a paper on and exhibited an ingenious device for the treatment of flat-foot.

Dr. L. S. Lacy gave a very interesting paper on influenza and some of its symptoms and complications.

Meeting July 22, 1926

The Pike County Medical Society met at Griggsville July 22, and after dinner at the hotel repaired to the public library for the meeting. A vote was taken favoring a clinic for pre-school-age children, as was also a vote favoring the holding of a tuberculosis clinic.

Dr. Swanberg extended the invitation of the Adams County Society to their annual picnic, to be held in the near future.

The A. M. A. plan for immediate organized medical relief in disaster was adopted by vote of the Society.

The matter of the Hodgen-Mudd memorial was brought to the attention of the Society by the committee, and as they were not ready with a complete report it was decided to continue the committee and that they be asked to make a complete report at the next meeting.

Dr. Frank Garm Norbury of Jacksonville read an interesting and instructive paper on "Encephalitis," bringing out a very clear disease picture, and the differential diagnostic points as well.

Dr. Ellsworth Black of Jacksonville read an excellent paper on "Renal Function," dwelling especially upon the importance of its consideration in surgical cases. This paper was quite fully discussed by Drs. Miller and Pollock of Quincy.

Dr. L. S. Lacy of Pittsfield then spoke on the advisability of having a Pike County tuberculosis sanitarium, taking a strong stand for it. The question was discussed by Drs. Kuntz and Chiasson of the Society, and by Dr. Newcomb, who is in charge of the Morgan County Sanitarium at Jacksonville, but the Society as such did not decide the question.

Dr. F. N. Wells read a paper on "Military Medicine" which was well received.

The next meeting will be at Barry October 28. All visiting brothers will be welcome. We had a very good attendance at this meeting, and many visitors from our neighboring societies, especially from Quincy, Jacksonville and Liberty.

F. N. Wells, Secretary.

Marriages

Henry Rex Amberson to Miss Nelle Davern, both of Chicago, at Crown Point, Ind., May 6.

Louis C. Arp, Moline, Ill., to Miss Eleanor M. Harned of Davenport, Iowa, June 24.

Zoltan Glatter, Dixon, Ill., to Miss Magda Fejer of Hungary, at New York, June 25.

William L. Hanson, East St. Louis, Ill., to Miss Mildred Champion of Granite City, June 29.

Don B. Stewart, Zeigler, Ill., to Miss Helen Perry of Mount Vernon, at Louisville, Ky., June 23.

Leon W. Kelso, Carlinville, Ill., to Miss Bonnie Woods of Jacksonville, June 4.

Personals

Dr. Frank P. Norbury, Jacksonville, addressed the Decatur Medical Society, recently, on "Epidemic Encephalitis."

Dr. Arthur M. Aszmann, East St. Louis, has been elected a director of the Illinois Trapshoot Association.

Dr. Stephen R. Pietrowicz has been elected chief of staff of St. Mary of Nazareth Hospital, succeeding the late Dr. Albert J. Ochsner; Dr. George Mueller has been elected surgeon-in-chief.

Dr. Franklin H. Martin received the honorary degree of doctor of public health at the recent graduating exercises of Detroit College of Medicine and Surgery, Detroit.

Dr. Albert F. Storke has been elected president of the Oak Park Physicians Club to succeed Dr. Anna E. Blount; Dr. Hugh T. Patrick, Chicago, recently addressed the club on "The Expert Witness."

Dr. Mabel M. Matthies has been elected president of the Chicago Women's Medical Club; Dr. Gertrude F. Thompson and Dr. Anny M. Saunders, vice presidents; Dr. Minnie Jahp, secretary; Dr. Goldye L. Hoffman, treasurer, and Dr. Sadie B. Adair, editor.

Dr. Casey A. Wood has spent a year in Ceylon collecting material on comparative vision in birds and has now gone to Kashmir to continue this study for six months, when he will return to Chicago by way of China and the Philippine Islands; Dr. Wood has been made honorary collaborator in the Division of Birds, Smithsonian Institution, Washington, D. C., for his contributions to ornithology.

Frederick B. Noyes, D.D.S., professor and head of the department of orthodontia, has been appointed dean of the College of Dentistry of the University of Illinois to succeed Dr. Frederick B. Moorehead, resigned; Dr. Frederick W. Maroney, former director, department of health instruction of public schools, Atlantic City, N. J., has been appointed associate professor of physical education, and Edward A. Boyden, Ph.D., associate professor of anatomy.

Dr. J. Clarence Webster, Shediac, N. B., formerly professor and head of the department of obstetrics and gynecology at Rush Medical College, received the honorary degree of doctor of laws at the recent commencement exercises of Dalhousie University, in recognition, the *Canadian Medical Association Journal* says, of his work in forwarding the interests of education and of his research in the history of the maritime provinces. Dr. Webster was invited to deliver the principal address at the commencement exercises.

News Notes

—A drive has been started to raise $75,000 for a community hospital in Libertyville.

—The new 300-bed hospital building for St. Mary's Hospital, East St. Louis, was expected to be ready for occupancy July 1.

—The old building at the southeast corner of Wabash and Lake is now being torn down to make way for the new medical and dental arts building, which will be ready for occupancy, May 1, 1927.

—The Illinois Central Hospital is to build an additional wing of fifty beds, which will make the total capacity of the hospital 250, and provide additional space for laboratories; the main building was opened in 1916, and a wing was constructed in 1922.

—There has been established throughout the city a new type of nursing service to meet the demand for skilled care of the sick in homes where a nurse is not required full time. A nurse may now be engaged in Chicago by the hour between 8:30 a. m. and 10 p. m. at $2 for the first hour or fraction thereof, and $1 for the second hour or fraction thereof, the service being limited to three hours per visit. The Central Council for Nursing Education and the First District of the Illinois State Association of Graduate Nurses organized the service; calls should be made to the Chicago Nurses Club and Registry, 116 South Michigan Avenue, telephone State 8542.

—In the annual report of the secretary it appears that the Chicago Medical Society now has a membership of more than 4,000, and is the largest local medical society in the world. During the last year, the central society conducted twenty-five meetings, which were addressed by eighteen out-of-town guests in addition to members of the society. The council of the society held nine meetings, and the board of trustees eight, during the year. A campaign was carried on in every branch of the society for new members; seventy-eight members were dropped during the year for nonpayment of dues, the smallest number in several years; twenty-six transfers were issued to other county societies, and forty-nine of the members died.

—The first four weeks' course of summer clinics at Cook County Hospital, conducted under the auspices of the Chicago Medical Society, was officially opened, July 19, by Mr. Anton J. Cermak, president of the county board, who welcomed about 300 visiting physicians, among whom are ten women. The class in the wards was divided into groups of fifteen each; there followed a pathologic conference of the whole group in the amphitheater and a symposium Tuesday evening on goiter by Drs. Frederick Tice, Edward S. Blaine and Raymond W. McNealy, and on Friday evening a symposium on gastric and duodenal ulcer by Drs. William A. Brams and Karl A. Meyer; about sixty physicians on the staff of the hospital will assist in the instruction.

—Representatives of the Illinois State Medical Society, the state department of public health, the Illinois Tuberculosis and Public Health Association, the Illinois State Association of Graduate Nurses, the Illinois Society for Prevention of Blindness, the Chicago Heart Association and the Illinois Society for Mental Hygiene met in Chicago, June 14, and after a full discussion passed a motion that the organizations and their representatives present constitute the temporary organization of a state health council. A committee on principles, procedure and by-laws, consisting of the authorized representatives present at this meeting, was named and Dr. Jacob C. Krafft was elected chairman. The council will meet in Chicago, September 20, to receive the report of the committee. Other state organizations were invited to be present at the organization meeting. J. W. Becker was elected chairman, and Dr. Grace S. Wightman, secretary, of the temporary organization.

—The next examination given by the American Board of Otolaryngology will be held in Denver, Colorado, at the University Hospital on Monday, September 13, 1926. Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

—The Chicago (Mu) Chapter of the Alpha Mu Pi Omega Medical Fraternity, the oldest medical fraternity in the country, was organized and its officers installed under the auspices of the officers of the Grand Chapter of Milwaukee, at a live meeting held at the new Palmer House

on Saturday evening, July 10. A dinner was given the guests immediately after the ceremonies. The officers of the new chapter are: President, Dr. W. A. Newman Dorland; Vice-President, Dr. F. L. B. Jenney; Secretary, Dr. Roe J. Maier; Treasurer, Dr. P. J. Sarma. The charter members of the chapter are Drs. W. A. Newman Dorland, Arthur M. Corwin, Henry Foster Lewis, W. Moore Thompson, P. Joseph Sarma, Chester Henry Keogh, Otto A. Kreml, M. J. Hubeny, B. C. Cushway, Roe J. Maier, J. Rawson Pennington, U. G. Darling, William Hamlin Wilder, F. L. B. Jenney, M. J. Latimer, E. K. Houchins, Elzear La Mothe, Walter T. Venn, Henry French Goodwin, William McIlvaine Thompson, William W. Meloy, Melbourne Mabee, A. J. McCarter, Lee Alexander Stone, William H. Gehl and William R. Campbell.

—The Illinois Federation of Women's Clubs, through its chairman of Public Health and Hygiene, Dr. Lena K. Sadler, has outlined an ambitious program of club activities for the year 1926-27. Recognizing that some clubs will be more interested in public health, and others in child welfare, the program provides plenty of subjects for both activities: 1, promotion of plan for saving mothers and babies in your county; 2, promotion of plan for pre-school child examinations; 3, promotion of medical inspection of school children; 4, promotion of dental inspection of school children; 5, no diphtheria; 6, health audits; 7, digest of health laws. A circular carrying the suggestions above mentioned with additional details was published in the *Illinois Clubwoman's World*. The chairman is sanguine of success in club activities, and states that "Illinois stands alone in achievement possibilities, because of the unusual co-operation of four great agencies in the State—the Federated Clubs, the Illinois State Medical Society, the Illinois State Dental Society and the Illinoise State Department of Public Health."

Deaths

Edward C. Allworth, London Mills, Ill.; Jenner Medical College, Chicago, 1898; aged 68; died, June 13, of carcinoma of the throat.

George Cheney Blish, Galena, Ill.; Chicago Medical College, 1881; died, July 4, of heart disease.

John B. Cary, Donnellson, Ill. (licensed, Illinois, 1878); aged 82; died, June 5, of cerebral hemorrhage.

Carl Frischkorn, Oak Park, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 80; died, May 1.

Clarence Gilbert Goodwin, Chicago; Northwestern University Medical School, Chicago, 1903; member of the Illinois State Medical Society; aged 56; died, June 28, of cerebral hemorrhage.

Sara C. Hall, Elgin, Ill.; Woman's Medical College of Pennsylvania, Philadelphia, 1870; formerly on the staff of the Mercy Hospital, Fort Scott, Kan.; aged 91; died, May 30, of hypostatic pneumonia and senility.

George Franklin Hilton, St. Augustine, Ill.; College of Physicians and Surgeons, Keokuk, 1879; a Fellow, A. M. A.; aged 70; died, June 3, following a long illness.

Elisha I. Hook, Chicago; Rush Medical College, Chicago, 1889; a Fellow, A. M. A.; aged 67; died, May 25, at Mobile, Ala., of arterio-sclerosis.

Joseph M. Huber, Chicago; Hahnemann Medical College and Hospital, Chicago, 1906; aged 50; died, June 10, of chronic nephritis and uremia.

Robert M. Little, East St. Louis, Ill.; Washington University Medical School, St. Louis, 1899; aged 60; died, May 25, of myocarditis.

H. Horace Long, Orion, Ill.; Jefferson Medical College of Philadelphia, 1868; aged 85; died, June 6.

Charles R. Oatman, Collinsville, Ill.; St. Louis Medical College, 1871; aged 80; died, June 29, of heart disease and senility.

Thomas J. Osburn, Stonefort, Ill. (licensed, Illinois, 1877); aged 86; died, May 28.

Joseph Hercule Roy, Kankakee, Ill.; University of Montreal Medical Faculty, Montreal, Que., Canada, 1886; a Fellow, A. M. M.; aged 65; died, June 15, at the Mercy Hospital, Chicago, following an operation for carcinoma.

Eliza H. Root, Sycamore, Ill.; Northwestern University Woman's Medical School ,Chicago, 1882; member of the Illinois State Medical Society; formerly on the faculty of her alma mater; at one time on the staffs of the Women and Children's Hospital and the Wesley Memorial Hospital, Chicago; aged 80; died, June 12, of carcinoma.

Charles H. Dunn, Cherry, Ill.; Chicago College of Medicine and Surgery, 1909; aged 52; died, June 21, at St. Margaret's Hospital, Spring Valley, of streptococcic septicemia, following an abrasion of the upper lip.

John Hall Gernon, Kankakee, Ill.; Rush Medical College, Chicago, 1872; member of the Illinois State Medical Society; aged 75; died, June 19, of heart disease.

Harry Eugene Kerch, Dundee, Ill.; Chicago Homeopathic Medical College, 1892; a Fellow, A. M. A.; aged 58; died, June 27, of cerebral hemorrhage.

William D. Morgan, Charleston, Ill.; Chicago Medical College, 1879; aged 70; died, April 15, of heart disease.

James P. Prestley, Newton, Ill.; Rush Medical College, Chicago, 1886; a Fellow, A. M. A., president and formerly secretary of the Jasper County Medical Society; aged 65; died, June 20, of uremia.